Volume 44, 45, 46, 47, 48
(1993, 1994, 1995, 1996, 1997)

Author Index

A

Abbott, N., J.-L. Puech, C. Bayonove, and R. Baumes. Determination of the aroma threshold of the *cis* and *trans* racemic forms of β-methyl-γ-octalactone by gas chromatography-sniffing analysis. 46:292-294.

Abgueguen, O., and R. B. Boulton. The crystallization kinetics of calcium tartrate from model solutions and wines. 44:65-75.

Acedo, M. I., E. Pueyo, and M. C. Polo. Preliminary studies on peptides in wine by HPLC. 45:167-172.

Acree, T. See B. Martineau. 46:385-388.

Adams, D. O., and C. Liyanage. Glutathione increases in grape berries at the onset of ripening. 44:333-338.

See K. E. Franke. 46:315-318.

See C. Liyanage. 44:8-12.

See M. L. Mendum. 48:137-144.

Agosin, E. See A. Belancic. 48:181-186.

Aires-de-Sousa, J. Verifying wine origin: A neural network approach. 47:410-414.

Alcántara, R. See J. M. García-Ruiz. 46:525-528.

See M. Morales. 48:33-38.

Alessandri, S., N. Vignozzi, and A. M. Vignini. *AmpeloCADs* (Ampelographic Computer-Aided Digitizing System): An integrated system to digitize, file, and process biometrical data from *Vitis* spp. leaves. 47:257-267.

Alonso, E. See V. Kovac. 46:363-367.

Alonso, G. L. See M. R. Salinas. 47:134-144.

Altira, D. See T. S. Collins. 48:280-284.

Alvarez, J. A. See D. Escolar. 46:138-142.

An, D., and C. S. Ough. Urea excretion and uptake by wine yeasts as affected by various factors. 44:35-40.

Ancin, C., B. Ayestaran, and J. Garrido. Clarification by vacuum filtration of Garnacha must. Utilization of free amino acids during fermentation and bottle-aging of wine. 47:313-322.

Andersen, P. C., C. A. Sims, and J. M. Harrison. Influence of simulated mechanized pruning and hand pruning on yield and berry composition of *Vitis rotundifolia* Noble and Welder. 47:291-296.

Andersen-Bagge, J. See S. E. Spayd. 47:389-402.

Andioc, V. See J. F. Cavin. 44:76-80.

Angulo, L. See C. Lema. 47:206-216.

Anocibbar Beloqui, A., P. Guedes de Pinho, and A. Bertrand. *Bis*(2-hydroxyethyl) bisulfide, a new sulfur compound found in wine. Its influence in wine aroma. 46:84-87.

Antoce, O. A., V. Antoce, K. Takahashi, N. Pomohaci, and I. Namolosanu. A calorimetric method applied to the study of yeast growth inhibition by alcohols and organic acids. 48:413-422.

Antoce., V. See O. A. Antoce. 48:413-422.

Araújo, A. N., J. L. F. C. Lima, M. L. M. F. S. Saraiva, and E. A. G. Zagatto. A new approach to dialysis in sequential injection systems: Spectrophotometric determination of L(+)-lactate in wines. 48:428-432.

Argamante, N. See S. Guidoni. 48:438-442.

Arellano, M., F. Couderc, and Ph. Puig. Simultaneous separation of organic and inorganic acids by capillary zone electrophorsis. Application to wines and fruit juices. 48:403-412.

Ari'izumi, K., Y. Suzuki, I. Kato, Y. Yagi, K. Otsuka, and M. Sato. Winemaking from Koshu variety by the *sur lie* method: Change in the content of nitrogen compounds. 45:312-318.

Arnold, G. M. See J. Bakker. 44:27-34.

Arola, L. See M. Constantí. 48:339-344.

Artajona, J. See J. Marco. 45:192-200.

Austin, R. K., W. Clay, S. Phimphivong, J. L. Smilanick, and J. Henson. Patterns of sulfite residue persistence in seedless grapes during three months of repeated sulfur dioxide fumigations. 48:121-124.

Auw, J. M., V. Blanco, S. F. O'Keefe, and C. A. Sims. Effect of processing on the phenolics and color of Cabernet Sauvignon, Chambourcin, and Noble wines and juices. 47:279-286.

Ayala, F., J. F. Echávarri, and A. I. Negueruela. A new simplified method for measuring the color of wines. I. Red and rosé wines. 48:370-376.

_____, J. F. Echávarri, and A. I. Negueruela. A new simplified method for measuring the color of wines. II. White wines and brandies. 48:377-382.

Ayestaran, B. See C. Ancin. 47:313-322.

Ayuso, J. See D. Escolar. 46:138-142.

B

Babini, R. See R. Credi. 48:7-12.

Bakker, J., and G. M. Arnold. Analysis of sensory and chemical data for color evaluation of a range of red rort wines. 44:27-34.

_____, S. J. Bellworthy, T. A. Hogg, R. M. Kirby, H. P. Reader, F. S. S. Rogerson, S. J. Watkins, and J. A. Barnett. Two methods of port vinification: A comparison of changes during fermentation and of characteristics of the wines. 47:37-41.

Bandman, E. B. See J. E. Bowers. 44:266-274.

Barnett, J.A. See J. Bakker. 47:37-41.

Barre, P. See C. Dubois. 47:363-368.

See J. M. Sablayrolles. 44:127-133, 134-138.

See J. M. Salmon. 44:56-64.

Bartra, E. See S. K. Park. 45:341-344.

Bastos, M. L. See F. Carvalho. 46:63-66.

Bates, R. P. See C. A. Sims. 46:155-158.

Battistutta., F. See R. Zironi. 48:150-156.

Bauer, F. See H. Volschenki. 48:193-197.

Baumes, R. See N. Abbott. 46:292-294.

See A. Belancic. 48:181-186.

Bavaresco, L., and M. A. Walker. Techniques for successfully establishing *Xiphinema index* in dual culture with grape. 45:273-277.

Bayonove, C. See N. Abbott. 46:292-294.

See A. Belancic. 48:181-186.

See A. Delcroix. 45:291-296.

Beaumont, J. L. See M. G. Chisholm. 45:201-212.

Belancic, A., E. Agosin, A. Ibache, E. Bordeu, R. Baumes, A. Razungles, and C. Bayonove. Influence of sun exposure on the aromatic composition of Chilean Muscat grape cultivars Moscatel de Alejandria and Moscatel rosada. 48:181-186.

Bell, C. R., G. A. Dickie, and J. W. Y. F. Chan. Variable response of bacteria isolated from grapevine xylem to control grape crown gall disease *in planta*. 46:499-508.

Bellworthy, S. J. See J. Bakker. 47:37-41.

Bely, M. See J. M. Salmon. 44:56-64.

Benitez, J. G., M. M. Grandal Delgado, and J. D. Martin. Study of the acidification of sherry musts with gypsum and tartaric acid. 44:400-404.

Benítez, T. See P. Martínez. 48:55-62, 160-168.

Berlioz, G. See A. Deloire. 46:571-578.

Berna, A. See M. Haba. 48:285-290.

Bertolini, L. C. Zambonelli, P. Giudici, and L. Castellari. Higher alcohol production by cryotolerant *Saccharomyces* strains. 47:343-345.

Bertrand, A. See A. Anocibbar Beloqui. 46:84-87.

Bertrand, A. See V. Gerbaux. 48:49-54.

See P. Guedes de Pinho. 46:181-186.

See A. Miele. 44:180-186.

Bessis, R. See P. Jeandet. 46:1-4.

Bestwick, R. K. See J. Monis. 47:199-205.

Bianchi, M. See L. P. Christensen. 45:141-149, 150-154, 377-387; 46:10-16, 493-498.

Biricolti, S., F. Ferrini, E. Rinadelli, I. Tamantini, and N. Vignozzi. VAM fungi and soil lime content influence rootstock growth and nutrient content. 48:93-99.

Bisson, L. F., C. E. Butzke, and S. E. Ebeler. The role of moderate ethanol consumption in health and human nutrition. 46:449-462.

Blanco, V. See J. M. Auw. 47:279-286.

Bledsoe, A. M. See J. J. Marois. 44:261-265.

Boidron, J. N. See P. Chatonnet. 46:463-468.

Bordeu, E. See A. Belancic. 48:181-186.

Bostock, R. M. See J. J. Marois. 44:261-165.

Bouard, J. See L. Geny 48:80-84.

See A. Miele. 44:180-186.

Boulton, R. B. See O. Abgueguen. 44:65-75.

See S. K. Park. 45:341-344.

See C. S. Thomas. 44:211-116.

Bourgois, J. See P. Formisyn. 48:345-351.

Boursiquot, J. M. See P. This. 48:492-501.

Bourzeix, M. See J. M. Ricardo-da-Silva. 44:168-172.

Bowers, J. E., E. B. Bandman, and C. P. Meredith. DNA fingerprint characterization of some wine grape cultivars. 44:266-274.

Boyes, S. See H. Dawes. 45:319-326.

Boylston, T. D. See C. G. Edwards. 45:49-55.

Bravdo, B. See A. Naor. 45:423-428.

Breen, P. J. See S. F. Price. 46:187-194.

Brillouet, J.-M. See T. Doco. 47:108-110.

Brissonnet, F. and A. Maujean. Characterization of foaming proteins in a Champagne base wine. 44:297-301.

Brooks, J. D. See S.-Q. Liu. 46:166-174.

Broquedis, M. See L. Geny 48:80-84, 85-92.

Burr, T. J., and C. L. Reid. Biological control of grape crown gall with non-tumorigenic *Agrobacterium vitis* strain F2/5. 45:213-219.

_____, C. L. Reid, D. F. Splittstoesser, and M. Yoahimura. Effect of heat treatments on grape bud mortality and survival of *Agrobacterium vitis in vitro* and in dormant grape cuttings. 47:119-123.

See E. W. Stover 48:26-32, 145-149.

Butzke, C. E. See L. F. Bisson. 46:449-462.

Buxaderas, S. See C. de la Presa-Owens. 46:283-291, 529-541.

See E. López-Tamames. 47:193-198.

C

Cabanis, J. C. See P. L. Teissedre. 45:220-228.

Cabanis, M. T. See P. L. Teissedre. 45:220-228.

Cacho, J., J. E. Castells, A. Esteban, B. Laguna, and N. Sagristá. Iron, copper, and manganese influence on wine oxidation. 46:380-384.

See P. Hernández Orte. 48:229.235.

Cahoon, G. A. See Y. Gao. 46:339-345.

Caillet, S. See Y. Vasserot. 48:433-437.

Caldentey, P. See V. Mazzoleni. 45:401-406.

Candolfi-Vasconcelos, M. C., W. Koblet, G. S. Howell, and W. Zweifel. Influence of defoliation, rootstock, training system, and leaf position on gas exchange of Pinot noir grapevines. 45:173-180.

See G. S. Howell. 45:188-191.

See W. Koblet. 45:181-187.

Careri, M. See V. Mazzoleni. 45:401-406.

Castellari, L. See L. Bertolini. 47:343-345.

Cartechini, A., and A. Palliotti. Effect of shading on vine morphology and productivity and leaf gas exchange characteristics in grapevines in the field. 46:227-234.

Carvalho, F., M. L. Bastos, F. Remião, and M. A. Ferreira. Determination of oxalates in cork stoppers by HPLC with electrochemical detection. 46:63-66.

Casp, A. See M. Pérez-Cerrada. 44:292-296.

Castellari, L. See P. Giudici. 46:143-147.

Cavin, J. F., V. Andioc, P. X. Etiévant, and C. Divies. Ability of wine lactic acid bacteria to metabolize phenol carboxylic acids. 44:76-80.

See H. Prévost. 46:43-48.

Celotti, E. See R. Zironi. 48:150-156.

Cenis, J. L. See M. P. Quesada. 46:204-208.

Chacon, H. See J. P. Peros. 47:49-56.

Champagnol, F. See P. L. Teissedre. 45:220-228.

Chan, J. W. Y. F. See C. R. Bell. 46:499-508.

Charpentier, M. See A. Deloire. 46:571-578.

Chatonnet, P., D. Dubourdieu, and J. N. Boidron. The influence of *Brettanomyces/Dekkera sp.* yeasts and lactic acid bacteria on the ethylphenol content of red wines. 46:463-468.

_____, C. Viala, and D. Dubourdieu. Influence of polyphenolic components of red wines on the microbial synthesis of volatile phenols. 48:443-448.

Chen, G. N., G. R. Scollary, and V. A. Vicente-Beckett. Potentiometric stripping determination of lead, cadmium, and zinc in wine. 45:305-311.

Cheynier, V., I. Hidalgo Arellano, J. M. Souquet, and M. Moutounet. Estimation of the oxidative changes in phenolic compounds of Carignane during winemaking. 48:225-228.

_____, G. Masson, J. Rigaud, and M. Moutounet. Estimation of must oxidation during pressing in Champagne. 44:393-399.

Chisholm, M. G., L. A. Guiher, T. M. Vonah, and J. L. Beaumont. Comparison of some French-American hybrid wines with White Riesling using gas chromatography-olfactometry. 45:201-212.

_____, L. A. Guiher, and S. M. Zaczkiewicz. Aroma characteristics of aged Vidal blanc wine. 46:56-62.

Christensen, L. P., and M. L. Bianchi. Comparisons of Thompson Seedless clones for raisin production. 45:150-154.

_____, M. L. Bianchi, C. D. Lynn, A. N. Kasimatis, and M. W. Miller. The effects of harvest date on Thompson Seedless grapes and raisins. I. Fruit composition, characteristics, and yield. 46:10-16.

_____ , M. L. Bianchi, M. W. Miller, A. N. Kasimatis, and C. D. Lynn. The effects of harvest date on Thompson Seedless grapes and raisins. II. Relationships of fruit quality factors. 46:493-498.

_____ , M. L. Bianchi, W. L. Peacock, and D. J. Hirschfelt. Effect of nitrogen fertilizer timing and rate on inorganic nitrogen status, fruit composition, and yield of grapevines. 45:377-387.

_____ , G. M. Leavitt, D. J. Hirschfelt, and M. L. Bianchi. The effects of pruning level and post-budbreak cane adjustment on Thompson Seedless raisin production and quality. 45:141-149.

See J. M. Ricardo-da-Silva. 44:168-172.

Ciani, M. See A. Martini. 47:435-440.

See G. Rosini. 44:113-117.

Clay, W. See R. K. Austin. 48:121-124.

Cliff, M. A., M. C. Dever, and A. G. Reynolds. Descriptive profiling of new and commercial British Columbia table grape cultivars. 47:301-308.

See B. Girard. 48:198-206.

Clingeleffer, P. R. See E. H. Rühl. 44:81-85.

Cocito, C. See C. Delfini. 44:45245-8.

Coign, M. J. See B. J. Ector. 47:57-62.

Colin, A. See A. Deloire. 46:571-578.

Collins, T. S., C. A. Miller, K. D. Altira, and A. L. Waterhouse. Development of a rapid method for the analysis of ethanol in wines using capillary electrophoresis. 48:280-284.

Cologrande, O. See V. Mazzoleni. 45:401-406.

Comtat, M. See M. Gilis. 47:11-16.

Coombe, B. G. See D. I. Jackson. 46:579-580.

Confuron, Y. See J. P. Peros. 47:49-56.

Constantí, M. Poblet, L. Arola, A. Mas, and J. M. Guillamón. Analysis of yeast populations during alcoholic fermentation in a newly established winery. 48:339-344.

Conterno, L. See C. Delfini. 44:452-458.

Costa, A. See C. Delfini. 44:86-92.

Costas, C. L. See L. A. Regueiro. 44:405-408.

Couderc, F. See M. Arellano. 48:403-412.

Cox, D. J., and T. Henick-Kling. Protonmotive force and ATP generation during malolactic fermentation. 46:319-323.

Creasy, G. L., and P. B. Lombard. Vine water stress and peduncle girdling effects on pre- and post-veraison grape berry growth and deformability. 44:193-197.

_____ , S. F. Price, and P. B. Lombard. Evidence for xylem discontinuity in Pinot noir and Merlot grapes: Dye uptake and mineral composition during berry maturation. 44:187-192.

Credi, R., and A. R. Babini. Effects of virus and virus-like infections on growth, yield, and fruit quality of Albana and Trebbiano Romagnolo grapevines. 48:7-12.

Crisosto, C. H. See A. A. Gardea. 44:232-235.

Cuenat, Ph. See R. Pezet. 47:287-290.

Cuisset, C. See P. This. 48:492-501.

D

Dami, I.-E., C. Stushnoff, and R. A. Hamman, Jr. Field response of *Vitis vinifera* cultivars to methanol. 47:297-300.

See R. A. Hamman. 47:31-36.

Davis, C. R. See S.-Q. Liu. 45:229-234; 46:166-174.

Dawes, H., S. Boyes, J. Keene, and D. Heatherbell. Protein instability of wines: Influence of protein isolelectric point. 45:319-326.

Day, M. P., B.-L. Zhang, and G. J. Martin. The use of trace element data to complement stable isotope methods in the characterization of grape musts. 45:79-85.

de la Presa-Owens, C., R. Mª. Lamuela-Raventos, S. Buxaderas, and Mª. C. de la Torre-Boronat. Characterization of Macabeo, Xarel.lo, and Parellada white wines from the Penedès region. II. 46:529-541.

_____ , and A. C. Noble. Descriptive analysis of three white wine varieties from Penedès. 46:5-9.

De Benedictis, J. A., and J. Granett. Laboratory evaluation of grape roots as hosts of California grape phylloxera biotypes. 44:285-291.

_____ , J. Granett, and S. P. Taormino. Differences in host utilization by California strains of grape phylloxera. 47:373-379.

de la Presa-Owens, C., R. Mª. Lamuela-Raventos, S. Buxaderas, and Mª. C. de la Torre-Boronat. Differentiation and grouping characteristics of varietal grape musts from Penedès region (I). 46:283-291.

_____ , and A. C. Noble. Descriptive analysis of three white wines varieties from Penedès. 46:5-9.

_____ , and A. C. Noble. Effect of storage at elevated temperatures on aroma of Chardonnay wines. 48:310-316.

de la Torre-Boronat, Mª. C. See C. de la Presa-Owens. 46:283-291, 529-541.

See I. Segarra. 46:564-570.

Delcroix, A., Z. Günata, J.-C. Sapis, J.-M. Salmon, and C. Bayonove. Glycosidase activities of three enological yeast strains during winemaking: Effect on the terpenol content of Muscat wine. 45:291-296.

Delfini, C., C. Cocito, S. Ravaglia, and L. Conterno. Influence of clarification and suspended grape solid materials on sterol content of free run and pressed grape musts in the presence of growing yeast cells. 44:452-458.

_____ , and A. Costa. Effects of the grape must lees and insoluble materials on the alcoholic fermentation rate and production of acetic acid, pyruvic acid, and acetaldehyde. 44:86-92.

Deloire, A., M. Charpentier, G. Berlioz, A. Colin, and G. Gimonnet. Micropropagation of the grapevine: Results of 10 years of experiments in the Champagne vineyard and results of the first vinifications. 46:571-578.

Delpuech, E. See B. Robillard. 44:387-392.

de Mora, S. J., P. Lee, D. Shooter, and R. Eschenbruch. The analysis and importance of dimethylsulfoxide in wine. 44:327-332.

Denrayolles, M. See H. Volschenki. 48:193-197.

Dever, M. See A. G. Reynolds. 45:435-443; 46:542-558; 47:77-92.

See M. A. Cliff. 47:301-308.

Dharmadhikari, M. R. See K. L. Wilker. 48:516-520.

Diamandis, E. P. See D. M. Goldberg. 46:159-165; 47:415-420.

See G. J. Soleas. 46:346-352.; 48:169-176.

Dickie, G. A. See C. R. Bell. 46:499-508.

Dicks, L. M. T. See H. J. J. Van Vurren. 44:99-112.

Di Stefano, R. See S. Guidoni. 48:438-442.

Divies, C. See J. F. Cavin. 44:76-80.

See H. Prévost. 46:43-48.

Dizy, M. See E. Pueyo. 44:255-260.

Doco, T., J.-M. Brillouet, and M. Moutounet. Evolution of grape (Carignan noir cv.) and yeast polysaccharides during fermentation and post-maceration. 47:108-110.

Dokoozlian, N. K., and D. J. Hirschfelt. The influence of cluster thinning at various stages of fruit development on Flame Seedless table grapes. 46:429-436.

_____ , and W. M. Kliewer. The light environment within grapevine canopies. I. Description and seasonal changes during fruit development. 46:209-218.

_____ , and W. M. Kliewer. The light environment within grapevine canopies. II. Influence of leaf area density on fruit zone light

environment and some canopy assessment parameters. 46:219-226.

Donaldson, D. R., R. L. Snyder, C. Elmore, and S. Gallagher. Weed control influences vineyard minimum temperatures. 44:431-434.

Dorrestein, E., R. B. Ferreira, O. Laureano, and A. R. Teixeira. Electrophoretic and FPLC analysis of soluble proteins in four Portuguese wines. 46:235-242.

Dubois, C., C. Manginot, J.-L. Roustan, J.-M. Sablayrolles, and P. Barre. Effect of variety, year and grape maturity on the kinetics of alcoholic fermentation. 47:363-368.

Dubourdieu, D. See P. Chatonnet. 46:463-468; 48:443-448.

Dunst, R. See T. E. Martinson. 48:291-302.

Düring, H. Photosynthesis of ungrafted and grafted grapevines: Effects of rootstock genotype and plant age. 45:297-299.

Durliat, H. See M. Gilis. 47:11-16.

Duteurtre, B. See B. Robillard. 44:387-392.
See L. Viaux. 45:407-409.

E

Eastridge, J. S. See C. A. Sims. 46:155-158.

Ebeler, S. E. See L. F. Bisson. 46:449-462.

Echávarri, J. F. See F. Ayala. 48:370-376, 377-382.
See A. I. Negueruela. 46:353-356.

Ector, B. J., J. B. Magee, C. P. Hegwood, and M. J. Coign. Resveratrol concentration in muscadine berries, juice, pomace, purees, seeds, and wines. 47:57-62.

Eder, R. See U. Vrhovsek. 48:214-219.

Edson, C. E., G. S. Howell, and J. A. Flore. Influence of crop load on photosynthesis and dry matter partitioning of Seyval grapevines. I. Single leaf and whole vine response pre-and post-harvest. 44:139-147.

_____, G. S. Howell, and J. A. Flore. Influence of crop load on photosynthesis and dry matter partitioning of Seyval grapevines. II. Seasonal changes in single leaf and whole vine photosynthesis. 46:469-477.

_____, C. E., G. S. Howell, and J. A. Flore. Influence of crop load on photosynthesis and dry matter partitioning of Seyval grapevines. III. Seasonal changes in dry matter partitioning, vine morphology, yield, and fruit composition. 46:478-485.

Edwards, C. G., J. C. Peterson, T. D. Boylston, and T. D. Vasile. Interactions between *Leuconostoc oenos* and *Pediococcus parvulus* during vinification of red wines. 45:49-55.
See Y.-C. Huang. 47:1-10.
See S. E. Spayd. 46:49-55.
See D. R. Webster. 44:275-284.

Elmore, C. See D. R. Donaldson. 44:431-434.

English-Loeb, G. See T. E. Martinson. 48:291-302.

Enrique Castells, J. See J. Cacho. 46:380-384.

Erdei, L. See M. Laszlavik. 46:67-74.

Eschenbruch, R. See S. J. de Mora. 44:327-332.

Escolar, D., M. R. Haro, A. Saucedo, J. Ayuso, A. Jiminez, and J. A. Alvarez. Discoloring process in sherry wines studied by means of chromatic parameters. 46:138-142.

Es-Safi, N. See M. Hmamouchi. 47:186-192.

Essassi, E. M. See M. Hmamouchi. 47:186-192.

Esteban, A. See J. Cacho. 46:380-384.

Estrella, I. See C. Gómez-Cordovés. 46:295-298.

Etiévant, P. X. See J. F. Cavin. 44:76-80.
See L. Moio. 46:392-398.

Evans, R. G. See S. E. Spayd. 44:378-386.
See R. L. Wample. 44:159-167.

Ezzahouani, A., and L. E. Williams. The influence of rootstock on leaf water potential, yield, and berry composition of Ruby Seedless grapevines. 46:559-563.

F

Falqué, E., and E. Fernández. Effects of different skin-contact times on Treixadura wine composition. 47:309-312.

Farineau, J. See C. Glad. 45:327-332.

Fernández, E. See E. Falqué. 47:309-312.

Ferrandino, A. See S. Guidoni. 48:438-442.

Ferreira, M. A. See F. Carvalho. 46:63-66.

Ferreira, R. B. See E. Dorrestein. 46:235-242.

Ferrini, F., G. B. Mattii, and F. P. Nicese. Effect of temperature on key physiological responses of grapevine leaf. 46:375-379.
See S. Biricolti. 48:93-99.

Ferruzzi, M. See M. E. Guerzoni. 46:368-374.

Feuillat, F., and R. Keller. Variability of oak wood (*Quercus robur* L., *Quercus petraea* Liebl.) anatomy relating to cask properties. 48:502-508.

_____, L. Moio, E. Guichard, M. Marinov, N. Fournier, and J.-L. Puech. Variation in the concentration of ellagitannins and *cis*- and *trans*-β-methyl-γ-octalactone extracted from French oak wood (*Quercus robur* L., *Quercus petraea* Liebl.) under model cask conditions. 48:509-515.

Feuillat, M. See M. Guilloux-Benatier. 46:486-492.

Fischer, U., and A. C. Noble. The effect of ethanol, catechin concentration, and pH on sourness and bitterness of wine. 45:6-10.

Fisher, K. H. See D. C. Percival. 45:123-132, 133-140.
See C. Taureilles-Saurel. 46:22-28, 29-36.

Fleuriet, A. See T. Ramos. 44:13-16.

Flore, J. A. See C. E. Edson. 44:139-147; 46:469-477, 478-485.
See D. P. Miller. 47:244-250, 251-256, 380-388.
See R. K. Striegler. 44:313-319.

Folwell, R. J., D. E. Santos, S. E. Spayd, L. H. Porter, and D. S. Wells. Statistical technique for forecasting Concord grape production. 45:63-70.

Formisyn, H. Vaillant, F. Lantreibecq, and J. Bourgois. Development of an enzymatic reactor for initiating malolactic fermentation in wine. 48:345-351.

Forsline, P. L., J. Hoch, W. F. Lamboy, J. S. Hu, J. R. McFerson, D. A. Golino, and D. Gonsalves. Comparative effectiveness of symptomatology and ELISA for detecting two isolates of grapevine leafroll on graft-inoculated Cabernet franc. 47:239-243.

Fournier, N. See F. Feuillat. 48:509-515.
See E. Guichard. 46:419-423.
See G. Masson. 46:424-428.

Francis, I. L., M. A. Sefton, and P. J. Williams. The sensory effects of pre- or post-fermentation thermal processing on Chardonnay and Semillon wines. 45:243-251.
See M. A. Sefton. 44:359-370.

Frank, M. See R. N. Goodman. 44:22-26.

Franke, K. E., and D. O. Adams. Yield and quality of RNA from grape berries at different developmental stages. 46:315-318.

Fruchier, A. See M. Hmamouchi. 47:186-192.

Fuchigami, L. H. See A. A. Gardea. 44:232-235.

Fugelsang, K. C. See T. M. Toland. 47:111-112.
See V. L. Wahlstrom. 47:225-226.

Fujii, Y. See G. Okamoto. 46:17-21.

G

Gafner, J. See M. Schütz. 46:175-180.

See A. Viviani-Nauer. 48:63-66, 67-70.

Gal, L. See M. Laszlavik. 46:67-74.

Galindo, P. See J. C. Rivas-Gonzalo. 44:302-308.

Gallagher, S. See D. R. Donaldson. 44:431-434.

Gao, Y., and G. A. Cahoon. High performance liquid chromatographic analysis of anthocyanins in the red seedless table grape, Reliance. 46:339-345.

Garcia-Alsonso, A. See N. Martin-Carron. 48:328-332.

Garcia-Cazorla, J., and M. Xirau-Vayreda. Persistence of dicarboximidic fungicide residues in grapes, must, and wine. 45:338-340.

Garcia de la Serrana, H. L. See R. Gimenez Martinez. 47:441-446.

Garcia-Jares, C. See C. Lema. 47:206-216.

García-Ruíz, J. M., R. Alcántara, and J. Martín. Effects of reutilized potassium bitartrate seeds on the stabilization of dry sherry wine. 46:525-528.

Gardea, A. A., P. B. Lombard, C. H. Crisosto, L. W. Moore, L. H. Fuchigami, and L. V. Gusta. Evaluation of Frostgard™ as an antifreeze, inhibitor of ice nucleators, and cryoprotectant on Pinot noir leaf tissue. 44:232-235.

Gardini, F. See M. E. Guerzoni. 46:368-374.

Garrido, J. See C. Ancin. 47:313-322.

Gelobter, J. See A. Naor. 45:423-428.

Gent, A., G. Wegener, and F. Radler. Quantitative measurement of heat formation during malolactic fermentation. 48:423-427.

Geny, L., M. Broquedis, J. Martin-Tanguy, and J. Bouard. Free, conjugated, and wall-bound polyamines in various organs of fruiting cuttings of *Vitis vinifera* L. cv. Cabernet Sauvignon. 48:80-84.

_____, M. Broquedis, J. Martin-Tanguy, J.-P. Soyer, and J. Bouard. Effects of potassium nutrition on polyamine content of various organs of fruiting cuttings of *Vitis vinifera* L. cv. Cabernet Sauvignon. 48:85-92.

Gerbaux, V., A. Villa, C. Monamy, and A. Bertrand. Use of lysozyme to inhibit malolactic fermentation and to stabilize wine after malolactic fermentation. 48:49-54.

See I. Nault. 46:357-362.

Gilis, M., H. Durliat, and M. Comtat. Electrochemical biosensors for assays of L-malic and D-lactic acids in wines. 47:11-16.

Gimenez Martinez, R., H. L. Garcia de la Serrana, M. Villalon Mire, J. Quesada Granados, and M. C. Lopez Martinez. Influence of wood heat treatment, temperature, and maceration time on vanillin, syringaldehyde, and gallic acid contents in oak wood and wine spirit mixtures. 47:441-446.

Gimonnet, G. See A. Deloire. 46:571-578.

Giovanelli, G., C. Peri, and E. Parravicini. Kinetics of grape juice fermentation under aerobic and anaerobic conditions. 47:429-434.

Girard, B., T. G. Kopp, A. G. Reynolds, and M. Cliff. Influence of vinification treatments on aroma constituents and sensory descriptors of Pinot noir wines. 48:198-206.

Giudici, P., and R. E. Kunkee. The effect of nitrogen deficiency and sulfur-containing amino acids on the reduction of sulfate to hydrogen sulfide by wine yeasts. 45:107-112.

_____, C. Zambonelli, and R. E. Kunkee. Increased production of *n*-propanol in wine by yeast strains having an impaired ability to form hydrogen sulfide. 44:17-21.

_____, C. Zambonelli, P. Passarelli, and L. Castellari. Improvement of wine composition with cryotolerant *Saccharomyces* strains. 46:143-147.

See L. Bertolini. 47:343-345.

Glad, C., J. Farineau, J.-L. Regnard, and J.-F. Morot-Gaudry. The relative contribution of nitrogen originating from two seasonal ^{15}N Supplies to the total nitrogen pool present in the bleeding sap and in whole *Vitis vinifera* cv. Pinot noir grapevines at bloom time. 45:327-332.

Glories, Y. See C. Saucier. 48:383-386.

See N. Vivas. 47:103-107.

Goldberg, D. M., E. Ng, A. Karumanchiri, E. P. Diamandis, and G. J. Soleas. Resveratrol glucosides are important components of commercial wines. 47:415-420.

_____, J. Yan, E. Ng, E. P. Diamandis, A. Karumanchiri, G. Soleas, and A. L. Waterhouse. A global survey of *trans*-resveratrol concentrations in commercial wines. 46:159-165.

See G. J. Soleas. 46:346-352; 48:169-176.

Golino, D. A. Potential interactions between rootstocks and grapevine latent viruses. 44:148-152.

See P. L. Forseline. 47:239-243.

Gómez-Cordovés, C., M. L. Gonzáles-San José, B. Junquera, and I. Estrella. Correlation between flavonoids and color in red wines aged in wood. 46:295-298.

Goñi, I. See N. Martin-Carron. 48:328-332.

Gonsalves, D. See P. L. Forseline. 47:239-243.

Gonzales Cartagena, L., F. J. Pérez-Zuñiga, and F. Bravo Abad. Interactions of some environmental and chemical parameters affecting the color attributes of wine. 45:43-48.

Gonzáles-San José, M. L. See C. Gómez-Cordovés. 46:295-298.

Goodman, R. N., R. Grimm, and M. Frank. The influence of grape rootstocks on the crown gall infection process and on tumor development. 44:22-26.

See X.-A. Pu. 44:241-248, 249-254.

See B. I. Reisch. 44:441-444.

Grandal Delgado, M. M. See J. G. Benitez. 44:400-404.

Granett, J. See J. A. De Benedictis. 44:285-291; 47:373-379.

Grant, R. S., and M. A. Matthews. The influence of phosphorus availability, scion, and rootstock on grapevine shoot growth, leaf area, and petiole phosphorus concentration. 47:217-224.

_____, and M. A. Matthews. The influence of phosphorus availability and rootstock on root system characteristics, phosphorus uptake, phosphorus partitioning, and growth efficiency. 47:403-409.

Grimm, R. See R. N. Goodman. 44:22-26.

Grobler, J. See H. Volschenki. 48:193-197.

Grzegorczyk, W., and M. A. Walker. Surface sterilization of grape phylloxera eggs in preparation for *in vitro* culture with *Vitis* species. 48:157-159.

Gu, S., P. B. Lombard, and S. F. Price. Effect of shading and nitrogen source on growth, tissue ammonium and nitrate status, and inflorescence necrosis in Pinot noir grapevines. 47:173-180.

Gu, S., P. B. Lombard, and S. F. Price. Inflorescence necrosis induced from ammonium incubation and deterred by α-keto-glutarate and ammonium assimilation in Pinot noir grapevines. 45:155-160.

Gubler, W. D. See C. S. Thomas. 44:205-210, 211-216.

Guedes de Pinho, P., and A. Bertrand. Analytical determination of furaneol (2,5-Dimethyl-4-hydroxy-3(2H)-furanone). Application to differentiation of white wines from hybrid and various *Vitis vinifera* cultivars. 46:181-186.

See A. Anocibbar Beloqui. 46:84-87.

Guerreau, J. See M. Guilloux-Benatier. 46:486-492.

Guerzoni, M. E., M. Sinigaglia, F.Gardini, M. Ferruzzi, and S. Torriani. Effects of pH, temperature, ethanol, and malate concentration on *Lactobacillus plantarum* and *Leuconostoc oenos*: Modelling of the malolactic activity. 46:368-374.

Guichard, E., N. Fournier, G. Masson, and J.-L. Puech. Stereoisomers of 8-methyl-γ-octalactone. I. Quantification in brandies as a function of wood origin and treatment of the barrels. 46:419-423.

See F. Feuillat. 48:509-515.

See G. Masson. 46:424-428.

Guidoni, S., F. Mannini, A. Ferrandino, N. Argamante, and R. Di Stefano. The effect of grapevine leafroll and rugose wood sanitation on agronomic performance and berry and leaf phenolic content of a Nebbiolo clone (*Vitis vinifera* L.). 48:438-442.

Guiher, L. A. See M. G. Chisholm. 45:201-212; 46:56-62.

Guillamón, J. M. See M. Constantí. 48:339-344.

Guilloux-Benatier, M., J. Guerreau, and M. Feuillat. Influence of initial colloid content on yeast macromolecule production and on the metabolism of wine microorganisms. 46:486-492.

Guitart, A. P. Hernández Orte. 48:229.235.

Günata, Z. See A. Delcroix 45:291-296.

Gusta, L. V. See A. A. Gardea. 44:232-235.

Gutierrez, Y. See J. C. Rivas-Gonzalo. 44:302-308.

H

Haag, K. M. See Y.-C. Huang. 47:1-10.

Haag, P. See A. G. Reynolds. 47:421-428.

Haba, M., A. Mulet, and A. Berna. Stability in wine differentiation of two close viticultural zones. 49:285-290.

Haight, K. G., and B. H. Gump. The use of macerating enzymes in grape juice processing. 45:113-116.

Hall, J. W. See A. G. Reynolds. 46:542-558.

Hamman, R. A., Jr., I.-E. Dami, T. M. Walsh, and C. Stushnoff. Seasonal carbohydrate changes and cold hardiness of Chardonnay and Riesling grapevines. 47:31-36.

See I.-E. Dami. 47:297-300.

Hanamure, K. See M. Sato. 48:1-6.

Hardman, M. J. See S.-Q. Liu. 45:235-242.

Haro, M. R. See D. Escolar. 46:138-142.

Harrison, J. M. See P. C. Anderson. 47:291-296.

Heatherbell, D. A. See H. Dawes. 45:319-326.

Hebrero, E. See J. C. Rivas-Gonzalo. 44:302-308.

Hegwood, C. P. See B. J. Ector. 47:57-62.

Henick-Kling, T., and Y. H. Park. Considerations for the use of yeast and bacterial starter cultures: SO_2 and timing of inoculation. 45:464-469.

_____, and G. S. Stoewsand. Lead in wine. 44:459-463.

See D. J. Cox. 46:319-323.

See B. Martineau. 46:385-388, 442-448.

Henschke, P. A., and C. S. Ough. See V. Jiranek. 46:75-83, 269-273.

Henson, J. See R. K. Austin. 48:121-124.

Hernández Orte, P., A. Guitart, and J. Cacho. Amino acid determination in musts and wines by HPLC after derivatization with phenylisothiocyanate. 48:229-235.

Herold, B., P. Pfeiffer, and F. Radler. Determination of the three isomers of 2,3-butanediol formed by yeasts or lactic acid bacteria during fermentation. 46:134-137.

Herraiz, T., and C. S. Ough. Formation of ethyl esters of amino acids by yeasts during the alcoholic fermentaiton of grape juice. 44:41-48.

_____, and C. S. Ough. Separation and characterization of 1,2,3,4-tetrahydro-ß-carboline-3-carboxylic acids by HPLC and GC-MS. Identification in wine samples. 45:92-101.

Hidalgo Arellano, I. See V. Cheynier. 48:225-228.

Hirano, K. See P. H. Kimura. 47:152-156; 48:323-327.

See C. K. Ndung'u. 47:157-162; 48:115-120.

See G. Okamoto. 46:17-21.

Hirschfelt, D. J. See L. P. Christensen. 45:141-149, 377-387.

See N. K. Dokoozlian. 46:429-436.

Hmamouchi, M., N. Es-Safi, M. Lahrichi, A. Fruchier, and E. M. Essassi. Flavones and flavonols in leaves of some Moroccan *Vitis vinifera* cultivars. 47:186-192.

Hoch, J. See P. L. Forseline. 47:239-243.

Hoffmann-Boller, P. See A. Viviani-Nauer. 48:63-66, 67-70.

Hogg, T. A. See J. Bakker. 47:37-41.

Howell, G. S., M. C. Candolfi-Vasconcelos, and W. Koblet. Response of Pinot noir grapevine growth, yield, and fruit composition to defoliation the previous growing season. 45:188-191.

See M. C. Candolfi-Vasconcelos. 45:173-180.

See C. E. Edson. 44:139-147; 46:469-477, 478-485.

See W. Koblet. 45:181-187.

See D. P. Miller. 44:435-440; 47:244-250, 251-256, 380-388.

See R. P. Smithyman. 48:482-491.

See R. K. Striegler. 44:313-319.

Hu, J. S. See P. L. Forseline. 47:239-243.

Huang, Y.-C., C. G. Edwards, J. C. Peterson, and K. M. Haag. Relationship between sluggish fermentations and the antagonism of yeast by lactic acid bacteria. 47:1-10.

Huang, Z., and C. S. Ough. Identification of N-carbamyl amino acids in wines and in yeast cells. 44:49-55.

Hubácková, M. Dependence of grapevine bud cold hardiness on fluctuations in winter temperatures. 47:100-102.

Huerta, M. D. See M. R. Salinas. 47:134-144.

Hunter, J. J., H. P. Ruffner, C. G. Volschenk, and D. J. Le Roux. Partial defoliation of *Vitis vinifera* L. cv. Cabernet Sauvignon/99 Richter: Effect on root growth, canopy efficiency, grape composition, and wine quality. 46:306-314.

I

Ibache, A. See A. Belancic. 48:181-186.

Ibeas, J. I., I. Lozano, F. Perdigones, and J. Jimenez. Dynamics of flor yeast populations during the biological aging of sherry wines. 48:75-79.

_____, I. Lozano, F. Perdigones, and J. Jimenez. Effects of ethanol and temperature on the biological aging of sherry wines. 48:71-74.

Iñiguez Crespo, M., and B. Vázquez Lasa. Determination of biogenic amines and other amines in wine by an optimized HPLC method with polarity gradient elution. 45:460-463.

Intrieri, C., and S. Poni. Integrated evolution of trellis training systems and machines to improve grape quality and vintage quality of mechanized Italian vineyards. 46:116-127.

See S. Poni. 45:278-284.

Irelan, N. A., and C. P. Meredith. Genetic analysis of *Agrobacterium tumefaciens* and *A. vitis* using randomly amplified polymorphic DNA. 47:145-151.

J

Jackson, D. I., and B. G. Coombe. Early bunchstem necrosis - a matter of nomenclature. 46:579-580.

_____, and P. B. Lombard. Environmental and management practices affecting grape composition and wine quality - A review. 44:409-430.

Janse, J. H. See N. P. Jolly. 44:217-226.

Jasinski, Y. See B. W. Zoecklein. 48:397-402.

Jeandet, P., R. Bessis, M. Sbaghi, P. Meunier, and P. Trollat. Resveratrol content of wines of different ages: Relationship with fungal disease pressure in the vineyard. 46:1-4.

Jiminez, A. See D. Escolar. 46:138-142.

Jimenez, J. See J. I. Ibeas. 48:71-74, 75-79.

Jimeno, J. See M. R. Salinas. 47:134-144.

Jiranek, V., P. Langridge, and P. A. Henschke. Amino acid and ammonium utilization by *Saccharomyces cerevisiae* wine yeasts from a chemically defined medium. 46:75-83.

_____, P. Langridge, and P. A. Henschke. Validation of bismuth-containing indicator media for predicting H_2S-producing potential of *Saccharomyces cerevisiae* wine yeasts under enological conditions. 46:269-273.

Johnston, T. V., and J. R. Morris. Circular dichroism cv. Cabernet Sauvignon and *Vitis rotundifolia* cv. Noble red wine liquid chromatographic fractions. 47:323-328.

Jolly, N. P., B. J. H. Janse, T. J. Van Rooyen, and J. H. Louw. Hybridization and typing of yeasts used in sparkling wine fermentations. 44:217-226.

Jones, R. S. See J. E. Rasmussen. 46:278-280.

Junquera, B. See C. Gómez-Cordovés. 46:295-298.

K

Kanellis, A. K. See K. A. Loulakakis. 47:181-185.

Karumanchiri, A. L. See D. M. Golberg. 46:159-165; 47:415-420.
See G. J. Soleas. 46:346-352; 48:169-176.

Kasimatis, A. N. See L. P. Christensen. 46:10-16, 493-498.
See J. A. Wolpert. 45:393-400; 46:437-441.

Kato, I. See K. Ari'izumi. 45:312-318.

Katoh, I. See M. Sato. 48:1-6.

Kawakami, A. K. See S. E. Spayd. 44:378-386.

Keene, J. See H. Dawes. 45:319-326.

Keller, R. See F. Feuillat. 48:502-508.

Kenyon, L. H. See J. J. Marois. 45:300-304.

Kimura, P. H., G. Okamoto, and K. Hirano. Effects of gibberellic acid and streptomycin on pollen germination and ovule and seed development in Muscat Bailey A. 47:152-156.

_____, G. Okamoto, and K. Hirano. Flower types, pollen morphology and germination, fertilization, and berry set in *Vitis coignetiae* Pulliat. 48:323-327.

Kirby, R. M. See J. Bakker. 47:37-41.

Kliewer, W. M. See N. K. Dokoozlian. 46:209-218, 219-226.
See R. Krueger. 46:37-42.
See L. Morano. 45:345-348.

Kobayashi, A. See G. Okamoto. 46:17-21.

Koblet, W., M. C. Candolfi-Vasconcelos, W. Zweifel, and G. S. Howell. Influence of leaf removal, rootstock, and training system on yield and fruit composition of Pinot noir grapevines. 45:181-187.
See M. C. Candolfi-Vasconcelos. 45:173-180.
See G. S. Howell. 45:188-191.

Kodama, S., T. Suzuki, S. Fujinawa, P. De La Teja, and F. Yotsuzuka. Urea contribution to ethyl carbamate formation in commercial wines during storage 45:17-24.

Kopp, T. G. See B. Girard. 48:198-206.

Kovac, V., E. Alonso, and E. Revilla. The effect of adding supplementary quantities of seeds during fermentation on the phenolic composition of wines. 46:363-367.

Krag, C. R. See J. K. Uyemoto. 48:521-524.

Krueger, R., and W. M. Kliewer. Arginine synthesis in grapevine leaves and berries: Diurnal and seasonal patterns, environmental and physiological influences. 46:37-42.

Ku, M. S. B. See A. M. Morrell. 48:459-464, 465-470.

Kunkee, R. E. See P. Giudici. 44:17-21.

L

Laguna, B. See J. Cacho. 46:380-384.

Lahrichi, M. S. See M. Hmamouchi. 47:186-192.
See J. Marco. 45:192-200.

Lakso, A. See T. E. Martinson. 48:291-302.
See S. Poni. 45:252-258.

Lamboy, W. F. See P. L. Forseline. 47:239-243.

Lamison, C. D. See J. J. Marois. 45:300-304.

Lamoureux, M. See H. Prévos. 46:43-48.

Lamuela-Raventós, R. M., and A. L. Waterhouse. A direct HPLC separation of wine phenolics. 45:1-5.
See C. de la Presa-Owens. 46:283-291, 529-541.

Landridge, P. See V. Jiranek. 46:75-83, 269-273.

Lanterrnan, W. S. See A. G. Reynolds. 48:449-458.

Lantreibecq, F. See P. Formisyn. 48:345-351.

Lao, E. See I. Segarra. 46:564-570.

Larpent, J. P. See I. Nault. 46:357-362.

Larrauri, J. A., P. Ruperez, and F. Saura Calixto. Antioxidant activity of wine pomace. 47:369-372.

Laszlavik, M., L. Gal, S. Misik, and L. Erdei. Phenolic compounds in two Hungarian red wines matured in *Quercus robur* and *Quercus petrea* barrels: HPLC analysis and diode array detection. 46:67-74.

Laureano, O. See E. Dorrestein. 46:235-242.

Lavallée, F., Y. Salvas, S. Lamy, D. Y. Thomas, R. Degré, and L. Dulau. PCR and DNA fingerprinting used as quality control in the production of wine yeast strains. 45:86-91.

Lazarova, G. See B. Tchorbanov. 44:93-98.

Leavitt, G. M. See L. P. Christensen. 45:141-149.

Lee, P. See S. J. de Mora. 44:327-332.

Lehtonen, P. Determination of amines and amino acids in wine — A review. 47:127-133.
See M. Tuiskunen. 48:220-224

Lema, C., C. Garcia-Jares, I.Orriols, and L. Angulo. Contribution of *Saccharomyces* and non-*Saccharomyces* populations to the production of some components of Albariño wine aroma. 47:206-216.

Lima, J. L. F. C. See A. N. Araújo. 48:428-432.

Little, D. See C. Saucier. 48:383-386.

Liu, L. See M. A. Walker. 46:299-305.

Liu, S.-Q., and C. R. Davis. Analysis of wine carbohydrates using capillary gas liquid chromatography. 45:229-234.

_____, C. R. Davis, and J. D. Brooks. Growth and metabolism of selected lactic acid bacteria in synthetic wine. 46:166-174.

_____, G. G. Pritchard, M. J. Hardman, and G. J. Pilone. Citrulline production and ethyl carbamate (urethane) precursor formation from arginine degradation by wine lactic acid bacteria *Leuconostoc oenos* and *Lactobacillus buchneri*. 45:235-242.

Liu, Y. See K. E. Franke. 46:315-318.

Liyanage, C., D. A. Luvisi, and D. O. Adams. The glutathione content of grape berries is reduced by fumigation with methyl bromide or methyl iodide. 44:8-12.
See D. O. Adams. 44:333-338.

Lombard, P. B. See G. L. Creasy. 44:187-192, 193-197.
See A. A. Gardea. 44:232-235.
See S. Gu. 45:155-160; 47:173-180.
See D. I. Jackson. 44:409-430.

Lonvaud-Funel, A. See J. C. Nielsen. 47:42-48.
See H. Volschenki. 48:193-197.

Lopez Martinez, M. C. See R. Gimenez Martinez. 47:441-446.

López Rubio, J. E. See L. A. Regueiro. 44:405-408.

López-Tamames, E., M. A. Puig-Deu, E. Teixeira, and S. Buxaderas. Organic acids, sugars, and glycerol content in white winemaking products determined by HPLC: Relationship to climate and varietal factors. 47:193-198.

See I. Segarra. 46:564-570.

Loulakakis, K. A., K. A. Roubelakis-Angleakis, and A. K. Kanellis. Isolation of functional RNA from grapevine tissues poor in nucleic acid content. 47:181-185.

Louw, J. H. See N. P. Jolly. 44:217-226.

Lozano, I. See J. I. Ibeas. 48:71-74, 75-79.

Lubbers, S., C. Charpentier, M. Feuillat, and A. Voilley. Influence of yeast walls on the behavior of aroma compounds in a model wine. 45:29-33.

Luvisi, D. A. See C. Liyanage. 44:8-12.

Lynn, C. D. See L. P. Christensen. 46:10-16, 493-498.

M

Macaulay, L. E., and J. R. Morris. Influence of cluster exposure and winemaking processes on monoterpenes and wine olfactory evaluation of Golden Muscat. 44:198-204.

Machiex, J. J. See T. Ramos. 44:13-16.

Magee, J. B. See B. J. Ector. 47:57-62.

Main, G. L., and J. R. Morris. Color of Seyval blanc juice and wine as affected by juice fining and bentonite fining during fermentation. 45:417-422.

Malvy, J. See B. Robillard. 44:387-392.

Mangia, A. See V. Mazzoleni. 45:401-406.

Manginot, C. See C. Dubois. 47:363-368.

Mannini, F. See S. Guidoni. 48:438-442.

Mantilla, J. L. G. See M. C. Martinez. 46:195-203.

Maquieira, A. See M. Pérez-Cerrada. 44:292-296.

See M. Peris-Tortajada. 44:118-120.

Marchal, R., V. Seguin, and A. Maujean. Quantification of interferences in the direct measurement of proteins in wines from the Champagne region using the Bradford method. 48:303-309.

Marco, J., J. Artajona, M. S. Larrechi, and F. X. Rius. Relationship between geographical origin and chemical composition of wood for oak barrels. 45:192-200.

Marcy, J. E. See B. W. Zoecklein. 48:397-402.

Marinov, M. See F. Feuillat. 48:509-515.

Marks, A. C., and J. R. Morris. Ascorbic acid effects on the post-disgorgement oxidative stability of sparkling wine. 44:227-231.

Marois, J. J., A. M. Bledsoe, R. W. Ricker, and R. M. Bostock. Sampling for *Botrytis cinerea* in harvested grape berries. 44:261-265.

_____, L. H. Kenyon, C. D. Lamison, and J. P. Smith. A rapid immunoassay method for quantifying mold in harvested wine grapes. 45:300-304.

Martens, M.-H. See B. I. Reisch. 44:441-444.

Martin, G. J. See M. P. Day. 45:79-85.

Martín, J. See J. M. García-Ruiz 46:525-528.

Martin, J. D. See J. G. Benitez. 44:400-404.

Martín-Alvarez, P. J. See E. Pueyo. 46:518-524.

Martin-Carron, N., A. Garcia-Alsonso, I. Goñi, and F. Saura-Calixto. Nutritional and physiological properties of grape pomace as a potential food ingredient. 48:328-332.

Martin-Tanguy, J. See L. Geny 48:80-84, 85-92.

Martineau, B., and T. Henick-Kling. Formation and degradation of diacetyl in wine during alcoholic fermentation with *Saccharomyces cerevisiae* strain EC1118 and malolactic fermentation with *Leuconostoc oenos* strain MCW. 46:442-448.

_____, T. Henick-Kling, and T. Acree. Reassessment of the influence of malolactic fermentation on the concentration of diacetyl in wines. 46:385-388.

Martinez, M. C., and J. L. G. Mantilla. Morphological and yield comparison between *Vitis vinifera* L. cv. Albariño grown from cuttings and from *in vitro* propagation. 46:195-203.

Martínez, P., L. Pérez Rodríguez, and T. Benítez. Velum formation by flor yeasts isolated from sherry wine. 48:55-62.

_____, L. Pérez Rodríguez, and T. Benítez. Evolution of flor yeast population during the biological aging of fino sherry wine. 48:160-168.

Martini, A., M. Ciani, and G. Scorzetti. Direct enumeration and isolation of wine yeasts from grape surfaces. 47:435-440.

Martinson, T. E., R. Dunst, A. Lakso, and G. English-Loeb. Impact of feeding injury by eastern grape leafhopper (Homoptera:Cicadellidae) on yield and juice quality of Concord grapes. 48:291-302.

Mas, A. See M. Constantí. 48:339-344.

Masson, G., E. Guichard, N. Fournier, and J.-L. Puech. Stereoisomers of ß-methyl-γ-octalactone. II. Contents in the wood of French (*Quercus robur* and *Quercus petraea*) and American (*Quercus alba*) oaks. 46:424-428.

_____, M. Moutounet, and J.-L. Puech. Ellagitannin content of oak wood as a function of species and of sampling position in the tree. 46:262-268.

See V. Cheynier. 44:393-399.

See E. Guichard. 46:419-423.

Matsudo, T. See K. Yokotsuka. 48:471-481.

Matthews, M. A. See R. S. Grant. 47:217-224, 403-409.

Mattii, G. B. See F. Ferrini. 46:375-379.

Maujean, A. See F. Brissonnet. 44:297-301.

See R. Marchal. 48:303-309.

See S. Palacios. 48:525-526.

See Y. Vasserot. 48:433-437.

Mauricio, J. C. See J. M. Salmon. 44:56-64.

Mayén, M. I., J. Mérida, and M. Medina. Flavonoid and non-flavonoid compounds during fermentation and post-fermentation standing of musts from Cabernet Sauvignon and Tempranillo grapes. 46:255-261.

_____, J. Merida, and M. Medina. Free anthocyanins and polymeric pigments during the fermentation and post-fermentation standing of musts from Cabernet Sauvignon and Tempranillo grapes. 45:161-166.

Mazzoleni, V., P. Caldentey, M. Careri, A. Mangia, and O. Colograndе. Volatile components of cork used for production of wine stoppers. 45:401-406.

McFerson, J. R See P. L. Forseline. 47:239-243.

McKinnon, A. J., G. R. Scollary, D. H. Solomon, and P. J. Williams. The influence of wine components on the spontaneous precipitation of calcium L(+)-tartrate in a model wine solution. 46:509-517.

Medina, M. See M. Mayén. 45:161-166; 46:255-261.

Melious, R. E. See S. Poni. 45:252-258.

Mendum, M. L., and D. O. Adams. Substrate utilization by grape N-carbamoylputrescine amidohydrolase: the final enzyme in putrescine biosynthesis. 48:137-144.

Meredith, C. P. See J. E. Bowers. 44:266-274.

See N. A. Irelan. 47:145-151.

Merida, J. See M. Mayén. 45:161-166; 46:255-261.

Meunier, P. See P. Jeandet. 46:1-4.

Miele, A., J. Bouard, and A. Bertrand. Fatty acids from lipid fractions of leaves and different tissues of Cabernet Sauvignon grapes 44:180-186.

Miller, C. A. See T. S. Collins. 48:280-284.

Miller, D. P., G. S. Howell, and J. A. Flore. Effect of shoot number on potted grapevines: I. Canopy development and morphology. 47:244-250.

_____ , G. S. Howell, and J. A. Flore. Effect of shoot number on potted grapevines: II. Dry Matter accumulation and partitioning. 47:251-256.

_____ , G. S. Howell, and J. A. Flore. Influence of shoot number and crop load on potted Chambourcin grapevines. I. Morphology and dry matter partitioning. 47:380-388.

_____ , G. S. Howell, and R. K. Striegler. Reproductive and vegetative response of mature grapevines subjected to differential cropping stresses. 44:435-440.

See R. P. Smithyman. 48:482-491.

Miller, M. W. See L. P. Christensen. 46:10-16, 493-498.

Miller, R. See C. S. Thomas. 44:205-210.

Mink, G. I. See A. M. Morrell. 48:459-464, 465-470.

Misik, S. See M. Laszlavik. 46:67-74.

Mitchev, G. See B. Tchorbanov. 44:93-98.

Moio, L., and P. X. Etiévant. Ethyl anthranilate, ethyl cinnamate, 2,3-dihydrocinnamate, and methyl anthranilate: four important odorants identified in Pinot noir wines of Burgundy. 46:392-398.

See F. Feuillat. 48:509-515.

Monamy, C. See V. Gerbaux. 48:49-54.

Monis, J., and R. K. Bestwick. Detection and localization of grapevine leafroll associated closteroviruses in greenhouse and tissue culture grown plants. 47:199-205.

Moore, L. W. See A. A. Gardea. 44:232-235.

Morano, L., and W. M. Kliewer. Root distribution of three grapevine rootstocks grafted to Cabernet Sauvignon grown on a very gravelly clay loam soil in Oakville, California. 45:345-348.

Morard, C. See L. Viaux. 45:407-409.

Morot-Gaudry, J. F. See C. Glad. 45:327-332.

Morales, M., J. Alcántara, and A. Ros Barceló. Oxidation of *trans*-resveratrol by a hypodermal peroxidase isoenzyme from Gamay rouge grape (*Vitis vinifera*) berries. 48:33-38.

Morrell, A. M., and R. L. Wample. Thermotolerance of dormant and actively growing Cabernet Sauvignon is improved by heat shock. 46:243-249.

_____ , R. L. Wample, G. I. Mink , and M. S. B. Ku. Expression of heat shock proteins in dormant buds of grape (*Vitis vinifera* L.). 48:465-470.

_____ , R. L. Wample, G. I. Mink, and M. S. B. Ku. Heat shock protein expression in leaves of Cabernet Sauvignon. 48:459-464.

Morris, J. R. See T. V. Johnston. 47:323-328.

See L. E. Macaulay. 44:198-204.

See G. L. Main. 45:417-422.

See A. C. Marks. 44:227-231.

See A. Siler. 44:320-326.

Motomura. Y. ^{4}C-Assimilate partitioning in grapevine shoots: Effects of shoot pinching, girdling of shoot, and leaf-halving on assimilates partitioning from leaves into clusters. 44:1-7.

Moutounet, M. See V. Cheynier. 44:393-399; 48:225-228.

See T. Doco. 47:108-110.

See G. Masson. 46:262-268.

See A. Vernhet. 47:25-30.

Mulet, A. See M. Haba. 49:285-290.

Muller, C. J. See T. M. Toland. 47:111-112.

See V. L. Wahlstrom. 47:225-226.

N

Nagel, C. W. See S. E. Spayd. 46:49-55.

Naitoh, A. See K. Yokotsuka. 44:371-377.

Namolosanu, I. See O. A. Antoce. 48:413-422.

Naor, A., B. Bravdo, and J. Gelobter. Gas exchange and water relations in field-grown Sauvignon blanc grapevines. 45:423-428.

_____ , and R. L. Wample. Gas exchange and water relations of field-grown Concord (*Vitis labruscana* Bailey) grapevines. 45:333-337.

Nault, I., V. Gerbaux, J. P. Larpent, and Y. Vayssier. Influence of preculture conditions on the ability of *Leuconostoc oenos* to conduct malolactic fermentation in wine. 46:357-362.

Navarro, G. See M. R. Salinas. 47:134-144.

Naylor, A. P. See A. G. Reynolds. 46:88-97; 47:63-76.

Ndung'u, C. K., G. Okamoto, and K. Hirano. Use of water stress in forcing Kyoho grapevines to produce two crops per year. 47:157-162.

_____ , M. Shimizu, G. Okamoto, and K. Hirano. Abscisic acid, carbohydrates, and nitrogen contents of Kyoho grapevines in relation to budbreak induction by water stress. 48:115-120.

Nebot Sanz, E. See V. M. Palacios. 48:317-322.

Nedjma, M. Influence of complex media composition, Cognac's brandy or Cognac, on the gas chromatography analysis of volatile sulfur compounds - preliminary results of the matrix effect. 48:333-338.

See F. Ayala. 48:370-376, 377-382.

Negueruela, A. I., J. F. Echávarri, and M. M. Pérez. A study of correlation between enological colorimetric indexes and CIE colorimetric parameters in red wines. 46:353-356.

Ng, E. See D. M. Goldberg. 46:159-165; 47:415-420.

See G. J. Soleas. 46:346-352; 48:169-176.

Nicese, F. P. See F. Ferrini. 46:375-379.

Nielsen, J. C., C. Prahl, and A. Lonvaud-Funel. Malolactic fermentation in wine by direct inoculation with freeze-dried *Leuconostoc oenos* cultures. 47:42-48.

Noble, A. C. Application of time-intensity procedures for the evaluation of taste and mouthfeel. 46:128-133.

See C. de la Presa-Owens. 46:5-9; 48:310-316.

See U. Fischer. 45:6-10.

See S. K. Park. 45:341-344.

Noitsakis, B. See A. Patakas. 48:352-356.

Novello, V. See A. Schubert. 46:324-328.

O

Okamoto, G., Y. Fujii, K. Hirano, A. Tai, and A. Kobayashi. Pollen tube growth inhibitors from Pione grape pistils. 46:17-21.

See P. H. Kimura. 47:152-156; 48:323-327.

See C. K. Ndung'u. 47:157-162; 48:115-120.

O'Keefe, S. F. See J. M. Auw. 47:279-286.

Okuda, T., and K. Yokotsuka. *Trans*-resveratrol concentrations in berry skins and wines from grapes grown in Japan. 47:93-99.

Oliveira, M., and M. Santos. A semi-empirical method to estimate canopy leaf area of vineyards. 46:389-391.

Orriols, I. See C. Lema. 47:206-216.

Osborn, M. M. See V. L. Wahlstrom. 47:225-226.

Osmianski, J. See A. Vernhet. 47:25-30.

Otaki, A. See K. Yokotsuka. 44:371-377.

Otsuka, K. See K. Ari'izumi. 45:312-318.

See M. Sato. 48:1-6.

Ough, C. S. Lead in wines — A review of recent reports. 44:464-467.
See D. An. 44:35-40.
See T. Herraiz. 44:41-48.
See Z. Huang. 44:49-55.
D. F. Sevens. 44:309-312.

P Q

Palacios, S., Y. Vasserot, and A. Maujean. Evidence for sulfur volatile products adsorption by yeast lees. 48:525-526.

Palacios, V. M., E. Nebot Sanz, and L. Pérez Rodríguez. Use of factor analysis for the characterization and modelling of maturation of Palomino fino grapes in the Jerez region. 48:317-322.

Palliotti, A. See A. Cartechini. 46:227-234.

Pardo, F. See M. R. Salinas. 47:134-144.

Park, S. K., R. B. Boulton, E. Bartra, and A. C. Noble. Incidence of volatile sulfur compounds in California wines. A preliminary survey. 45:341-344.

Park, Y. H. See T. Henick-Kling 45:464-469.

Parravicini, E. See G. Giovanelli. 47:429-434.

Passarelli, P. See P. Giudici. 46:143-147.

Passos, I. R. S. See C. V. Pommer. 47:340-342.

Patakas, A., and B. Noitsakis. Cell wall elasticity as a mechanism to maintain favorable water relations during leaf ontogeny in grapevines. 48:352-356.

Pazo, M. See A. Vaamonde. 48:177-180.

Pellerin, P. See A. Vernhet. 47:25-30.

Percival, D. C., K. H. Fisher, and J. A. Sullivan. Use of fruit zone leaf removal with *Vitis vinifera* L. cv. Riesling grapevines. I. Effects on canopy structure, microclimate, bud survival, shoot density, and vine vigor. 45:123-132.

_____, K. H. Fisher, and J. A. Sullivan. Use of fruit zone leaf removal with *Vitis vinifera* L. cv. Riesling grapevines. II. Effect on fruit composition, yield, and occurrence of bunch rot (*Botrytis cinerea* Pers.:Fr.). 45:133-140.

Perdigones, F. See J. I. Ibeas. 48:71-74, 75-79.

Pérez, M. M. See A. I. Negueruela. 46:353-356.

Pérez-Cerrada, M., A. Casp, and A. Maquieira. Chromatographic determination of the anion content in Spanish rectified concentrated musts. 44:292-296.

Pérez Rodríguez, L. See P. Martínez. 48:55-62; 48:160-168.
See V. M. Palacios. 48:317-322.

Peri, C. See G. Giovanelli. 47:429-434.

Peris-Tortajada, M., A. Maquieira, and R. Puchades. Automated determination of total acidity in wines by flow injection analysis. 44:118-120.

Peros, J. P. P. This, Y. Confuron, and H. Chacon. Comparison by isozyme and RAPD analysis of some isolates of the grapevine dieback fungus, *Eutypa lata*. 47:49-56.

Peterlunger, E. See A. Schubert. 46:324-328.

Peterson, J. C. See C. G. Edwards. 45:49-55.
See D. R. Webster. 44:275-284.
See Y.-C. Huang. 47:1-10.

Pezet, R., and Ph. Cuenat. Resveratrol in wine: Extraction from skin during fermentation and post-fermentation standing of must from Gamay grapes. 47:287-290.

Pfeiffer, P. See B. Herold. 46:134-137.

Phimphivong, S. See R. K. Austin. 48:121-124.

Pilone, G. J., M. G. Clayton, and R. J. Van Duivenboden. See S.-Q. Liu. 45:235-242.

Pires, E. J. P. See C. V. Pommer. 47:340-342.

Poblet, M. See M. Constantí. 48:339-344.

Pocock, K. F., M. A. Sefton, and P. J. Williams. Taste thresholds of phenolic extracts of French and American oakwood: The influence of oak phenols on wine flavor. 45:429-434.

Polanco, A. M. See J. C. Rivas-Gonzalo. 44:302-308.

Pommer, C. V., E. J. P. Pires, M. M. Terra, and I. R. S. Passos. Streptomycin-induced seedlessness in the grape cultivar Rubi (Italia Red). 47:340-342.

Polo, M. C. See M. I. Acedo. 45:167-172.
See E. Pueyo. 44:255-260; 46:518-524.

Pomohaci, N. See O. A. Antoce. 48:413-422.

Poni, S., C. Intrieri, and O. Silvestroni. Interactions of leaf age, fruiting, and exogenous cytokinins in Sangiovese grapevines under non-irrigated conditions. I. Gas exchange. 45:71-78.

_____, C. Intrieri, and O. Silvestroni. Interactions of leaf age, fruiting, and exogenous cytokinins in Sangiovese grapevines under non-irrigated conditions. II. Chlorophyll and nitrogen content. 45:278-284.

_____, A. N. Lakso, J. R. Turner, and R. E. Melious. Interactions of crop level and late season water stress on growth and physiology of field-grown Concord grapevines. 45:252-258.
See C. Intrieri. 46:116-127.

Popov, D. See B. Tchorbanov. 44:93-98.

Porter, L. H. See R. J. Folwell. 45:63-70.

Prahl, C. See J. C. Nielsen. 47:42-48.

Prévost, H., J. F. Cavin, M. Lamoureux, and C. Diviès. Plasmid and chromosome characterization of *Leuconostoc oenos* strains. 46:43-48.

Price, S. F., P. J. Breen, M. Valladao, and B. T. Watson. Cluster sun exposure and quercetin in Pinot noir grapes and wine. 46:187-194.
See G. L. Creasy. 44:187-192.
See S. Gu. 45:155-160; 47:173-180.
See A. G. Reynolds. 45:452-459; 47:329-339.
See J. D. Wightman. 48:39-48.

Prieur, C. See A. Vernhet. 47:25-30.

Prior, L. D. See R. M. Stevens. 45:285-290.

Pritchard, G. G. See S.-Q. Liu. 45:235-242.

Pu, X.-A., and R. N. Goodman. Effects of fumigation and biological control on infection of indexed crown gall-free grape plants. 44:241-248.

_____, and R. N. Goodman. Tumor formation by *Agrobacterium tumefaciens* is suppressed by *Agrobacterium radiobacter* HLB-2 on grape plants. 44:249-254.

Puchades, R. See M. Peris-Tortajada. 44:118-120.

Puech, J. L. See N. Abbott. 46:292-294.
See F. Feuillat. 48:509-515.
See E. Guichard. 46:419-423.
See G. Masson. 46:262-268, 424-428.

Pueyo, E., M. Dizy, and M. C. Polo. Varietal differentiation of must and wines by means of protein fraction. 44:255-260.

_____, P. J. Martín-Alvarez, and M. C. Polo. Relationship between foam characteristics and chemical composition in wines and cavas (sparkling wines). 46:518-524.
See M. I. Acedo. 45:167-172.

Puig, Ph. See M. Arellano. 48:403-412.

Puig-Deu, M., R. M. Lamuela-Raventós, S. Buxaderas, and C. Torre-Boronat. Determination of copper and iron in must: Comparison of

wet and dry ashing. 45:25-28.

See E. López-Tamames. 47:193-198.

Quesada, M. P., and J. L. Cenis. Use of random amplified polymorphic DNA (RAPD-PCR) in the characterization of wine yeasts. 46:204-208.

Quesada Granados, J. See R. Gimenez Martinez. 47:441-446.

R

Radler, F. See A. Gent. 48:423-427.

See B. Herold. 46:134-137.

Ramos, T., A. Fleuriet, M. Rascalou, and J. J. Machiex. The effect of anaerobic metabolism of grape berry skins on phenolic compounds. 44:13-16.

Rascalou, M. See T. Ramos. 44:13-16.

Rasmussen, J. E., E. Shultz, R. E. Snyder, R. S. Jones, and C. R. Smith. Acetic acid as a causative agent in producing stuck fermentations. 46:278-280.

Ravaglia, S. See C. Delfini. 44:452-458.

Razungles, A See A. Belancic. 48:181-186.

Reader, H. P. See J. Bakker. 47:37-41.

Regnard, J. L. See C. Glad. 45:327-332.

Regueiro, L. A., C. L. Costas, and J. E. López Rubio. Influence of viticultural and enological practices on the development of yeast populations during winemaking. 44:405-408.

Reid, C. L. See T. J. Burr. 45:213-219; 47:119-123.

Reisch, B. I., R. N. Goodman, M.-H. Martens, and N. F. Weeden. The relationship between Norton and Cynthiana, red wine cultivars derived from *Vitis aestivalis*. 44:441-444.

Remião, F. See F. Carvalho. 46:63-66.

Restagno, M. See A. Schubert. 46:324-328.

Revilla, E. See V. Kovac. 46:363-367.

Reynolds, A. G., W. S. Lanterman, and D. A. Wardle. Yield and berry composition of five *Vitis* cultivars as affected by *Rupestris* stem pitting virus. 48:449-458.

_____, S. F. Price, D. A. Wardle, and B. T. Watson. Fruit environment and crop level effects on Pinot noir. I. Vine performance and fruit composition in British Columbia. 45:452-459.

_____, L. J. Veto, P. L. Sholberg, D. A. Wardle, and P. Haag. Use of potassium silicate for the control of powdery mildew [*Uncinula necator* (Schwein) Burrill] in *Vitis vinifera* L. cultivar Bacchus. 47:421-428.

_____, and D. A. Wardle. Impact of training system and vine spacing on vine performance and berry composition of Seyval blanc. 45:444-451.

_____, and D. A. Wardle. Yield component path analysis of Okanagan Riesling vines conventionally pruned or subjected to simulated mechanical pruning. 44:173-179.

_____, D. A. Wardle, and M. Dever. Shoot density effects on Riesling grapevines: Interactions with cordon age. 45:435-443.

_____, D. A. Wardle, and M. Dever. Vine performance, fruit composition, and wine sensory attributes of Gewürztraminer in response to vineyard location and canopy manipulation. 47:77-92.

_____, D. A. Wardle, J. W. Hall, and M. Dever. Fruit maturation of four *Vitis vinifera* cultivars in response to vineyard location and basal leaf removal. 46:542-558.

_____, D. A. Wardle, and A. P. Naylor. Impact of training system and vine spacing on vine performance and berry composition of Chancellor. 46:88-97.

_____, D. A. Wardle, and A. P. Naylor. Impact of training system, vine spacing, and basal leaf removal on Riesling. Vine performance, berry composition, canopy microclimate, and vineyard labor requirements. 47:63-76.

_____, S. Yerle, B. T. Watson, S. F. Price, and D. A. Wardle. Fruit environment and crop level effects on Pinot noir. III. Composition and descriptive analysis of Oregon and British Columbia wines. 47:329-339.

See M. A. Cliff. 47:301-308.

See B. Girard. 48:198-206.

Ricardo-da-Silva, J. M., V. Cheynier, A. Samsom, and M. Bourzeix. Effect of pomace contact, carbonic maceration, and hyperoxidation on the procyanidin composition of Grenache blanc wines. 44:168-172.

Ricker, R. W. See J. J. Marois. 44:261-265.

Rigaud, J. See V. Cheynier. 44:393-399.

Rinadelli, E. See S. Biricolti. 48:93-99.

Rius, F. X. See J. Marco. 45:192-200.

Rivas-Gonzalo, J. C., Y. Gutierrez, A. M. Polanco, E. Hebrero, J. L. Vicente, P. Galindo, and C. Santos-Buelga. Biplot analysis applied to enological parameters in the geographical classification of young red wines. 44:302-308.

Robillard, B., E. Delpuech, L. Viaux, J. Malvy, M. Vignes-Adler, and B. Duteurtre. Improvements of methods for sparkling base wine foam measurements and effect of wine filtration on foam behavior. 44:387-392.

See L. Viaux. 45:407-409.

Robin, J. P. See C. Taureilles-Saurel. 46:29-36; 22-28.

See C. M. Tesnière. 45:267-272.

Rogerson, F. S. S. See J. Bakker. 47:37-41.

Rowhani, A. See J. K. Uyemoto. 48:521-524.

Romieu, C. See C. Taureilles-Saurel. 46:29-36; 22-28.

See C. M. Tesnière. 44:445-451; 45:267-272.

Ros Barceló, A. See M. Morales. 48:33-38.

Rosini, G., and M. Ciani. Influence of sugar type and level on malate metabolism of immobilized *Schizosaccharomyces pombe* cells. 44:113-117.

Roubelakis-Angleakis, K. A. See K. A. Loulakakis. 47:181-185.

Roustan, J.-L. See C. Dubois. 47:363-368.

Roytchev, V. Palynological classification of seedless grape (*Vitis vinifera* L.) cultivars. 48:207-213.

Ruffner, H. P. See J. J. Hunter. 46:306-314.

Rühl, E. H., and P. R. Clingelheffer. Effect of minimal pruning and virus inoculation on the carbohydrate and nitrogen accumulation in Cabernet franc vines. 44:81-85.

Ruperez, P. See J. A. Larrauri. 47:369-372.

S

Sablayrolles, J.-M., and P. Barre. Kinetics of alcoholic fermentation under anisothermal enological conditions. I. Influence of temperature evolution on the instantaneous rate of fermentation. 44:127-133.

_____ and P. Barre. Kinetics of alcoholic fermentation under anisothermal enological conditions. II. Prediction from the kinetics under isothermal conditions. 44:134-138.

See C. Dubois. 47:363-368.

Sagristá, N. See J. Cacho. 46:380-384.

Salinas, M. R., G. L. Alonso, G. Navarro, F. Pardo, J. Jimeno, and M.D. Huerta. Evolution of the aromatic composition of wines undergoing carbonic maceration under different aging conditions. 47:134-144.

Salmon, J. M., O. Vincent, J. C. Mauricio, M. Bely, and P. Barre. Sugar transport inhibition and apparent loss of activity in *Saccharomyces cerevisiae* as a major limiting factor of enological fermentations. 44:56-64.

See A. Delcroix. 45:291-296.

Samsom, A. See J. M. Ricardo-da-Silva. 44:168-172.

Sánchez, P. See A. Vaamonde. 48:177-180.

Santoro, M. Fractionation and characterization of must and wine proteins. 46:250-254.

Santos, D. E. See R. J. Folwell. 45:63-70.

Santos, M. See M. Oliveira. 46:389-391.

Santos-Buelga, C. See J. C. Rivas-Gonzalo. 44:3023-308.

Sapis, J.-C. See A. Delcroix. 45:291-296.

Saraiva, M. L. M. F. S. See A. N. Araújo. 48:428-432.

Sato, M., Y. Suzuki, K. Hanamure, I. Katoh, Y. Yagi, and K. Otsuka. Winemaking from Koshu variety by the *sur lie* method: Behavior of free amino acids and proteolytic activities in the wine. 48:1-6.

See K. Ari'izumi. 45:312-318.

Saucedo, A. See D. Escolar. 46:138-142.

Saucier, C., D. Little, and Y. Glories. First evidence of acetaldehyde-flavanol condensation products in red wine. 48:383-386.

Saura Calixto, F. See J. A. Larrauri. 47:369-372.

N. Martin-Carron. 48:328-332.

Sauvageot, F., and P. Vivier. Effects of malolactic fermentation on sensory properties of four Burgundy wines. 48:187-192.

Sbaghi, M. See P. Jeandet. 46:1-4.

Schneider, V. Evaluation of small amounts of flavonoid phenols in white wines by colorimetric assays. 46:274-277.

Schubert, A., M. Restagno, V. Novello, and E. Peterlunger. Effects of shoot orientation on growth, net photosynthesis, and hydraulic conductivity of *Vitis vinifera* L. cv. Cortese. 46:324-328.

Shultz, E. See J. E. Rasmussen. 46:278-280.

Schütz, M., and J. Gafner. Lower fructose uptake capacity of genetically characterized strains of *Saccharomyces bayanus* compared to strains of *Saccharomyces cerevisiae:* A likely cause of reduced alcoholic fermentation activity. 46:175-180.

Scollary, G. R. See G. N. Chen. 45:305-311.

Scorzetti, G. See A. Martini. 47:435-440.

Sefton, M. A., I. L. Francis, and P. J. Williams. The volatile composition of Chardonnay juices: A study by flavor precursor analysis. 44:359-370.

See I. L. Francis. 45:243-251.

See K. F. Pocock. 45:429-434.

Segarra, I., C. Lao, E. Lopez-Tamames, and M. C. de la Torre-Boronat. Spectrophotometric methods for the analysis of polysaccharide levels in winemaking products. 46:564-570.

Seguin, V. See R. Marchal. 48:303-309.

Semancik, J. S. See J. A. Wolpert. 47:21-24.

Seymour, B. J. D. R. Webster. 44:275-284.

Shimizu, M. See C. K. Ndung'u. 48:115-120.

Sholberg, P. L. See A. G. Reynolds. 47:421-428.

Shooter, D. See S. J. de Mora. 44:327-332.

Silacci, M. W. See C. S. Thomas. 44:205-210, 211-216.

Siler, A., and J. R. Morris. Quality effects of carbonation grape juices and their grape-apple blends. 44:320-326.

Silvestroni, O. See S. Poni. 45:278-284.

Sims, C. A., and R. P. Bates. Effects of skin fermentation time on the phenols, anthocyanins, ellagic acid sediment, and sensory characteristics of a red *Vitis rotundifolia* wine. 45:56-62.

_____, J. S. Eastridge, and R. P. Bates. Changes in phenols, color, and sensory characteristics of muscadine wines by pre- and post-fermentation additions of PVPP, casein, and gelatin. 46:155-158.

See P. C. Anderson. 47:291-296.

See J. M. Auw. 47:279-286.

Singleton, V. L. Maturation of wines and spirits: comparisons, facts, and hypotheses. 46:98-115.

See J. H. Thorngate, III. 45:259-262, 349-352.

See K. Yokotsuka. 46:329-338; 47:268-278; 48:13-25, 100-114.

Sinigaglia, M. See M. E. Guerzoni. 46:368-374.

Smilanick, J. L. See R. K. Austin. 48:121-124.

Smith, C. R. See J. E. Rasmussen. 46:278-280.

Smith, J. P. See J. J. Marois. 45:300-304.

Smithyman, R. P., G. S. Howell, and D. P. Miller. Influence of canopy configuration on vegetative development, yield, and fruit composition of Seyval blanc grapevines. 48:482-491.

Snyder, R. E. See J. E. Rasmussen. 46:278-280.

Snyder, R. L. See D. R. Donaldson. 44:431-434.

Soleas, G. J., D. M. Goldberg, E. P. Diamandis, A. Karumanchiri, J. Yan, and E. Ng. A derivatized gas chromatographic-mass spectrometric method for the analysis of both isomers of resveratrol in juice and wine. 46:346-352.

_____, D. M. Goldberg, E. Ng, A. Karumanchiri, E. Tsang, and E. P. Diamandis. Comparative evaluation of four methods for assay of *cis-* and *trans*-resveratrol. 48:169-176.

See D. M. Golberg. 46:159-165; 47:415-420.

Solomon, D. H. See A. J. McKinnon. 46:509-517.

Souquet, J. M. See V. Cheynier. 48:225-228.

Soyer, J.-P. See L. Geny 48:85-92.

Spayd, S. E., and J. Andersen-Bagge. Free amino acid composition of grape juice from 12 *Vitis vinifera* cultivars in Washington. 47:389-402.

_____, C. W. Nagel, and C. G. Edwards. Yeast growth in Riesling juice as affected by vineyard nitrogen fertilization. 46:49-55.

_____, R. L. Wample, R.G. Evans R. G. Stevens, B. J. Seymour, and C. W. Nagel. Nitrogen fertilization of White Riesling grapes in Washington. Must and wine composition. 45:34-42.

_____, R. L. Wample, R. G. Stevens, R. G. Evans, and A. K. Kawakami. Nitrogen fertilization of White Riesling in Washington: Effects on petiole nutrient concentration, yield, yield components, and vegetative growth. 44:378-386.

See R. J. Folwell. 45:63-70.

See R. L. Wample. 44:159-167.

See D. R. Webster. 44:275-284.

Splittstoesser, D. F. See T. J. Burr. 47:119-123.

Steenkamp, J., I. Wiid, A. Lourens, and P. Van Helden. Improved method for DNA extraction from *Vitis vinifera.* 45:102-106.

Stevens, D. F., and C. S. Ough. Ethyl carbamate formation: reaction of urea and citrulline with ethanol in wine under low to normal temperature conditions. 44:309-312.

Stevens, R. M., and L. D. Prior.The effect of transient waterlogging on the growth, leaf gas exchange, and mineral composition of potted Sultana grapevines. 45:285-290.

See S. E. Spayd. 44:378-386.

See R. L. Wample. 44:159-167.

Stoewsand, G. S. See T. Henick-Kling. 44:459-463.

Stover, E. W., H. J. Swartz, and T. J. Burr. Crown gall formation in a diverse collection of *Vitis* genotypes inoculated with *Agrobacterium vitis.* 48:26-32.

_____, H. J. Swartz, and T. J. Burr. *Agrobacterium vitis*-induced electrolyte leakage in crown gall-susceptible and -resistant grape genotypes. 48:145-149.

Striegler, R. K., G. S. Howell, and J. A. Flore. Influence of rootstock on the response of Seyval grapevines to flooding stress. 44:313-319.
See D. P. Miller. 44:435-440.

Stushnoff, C. See I.-E. Dami. 47:297-300.
See R. A. Hamman. 47:31-36.

Subden, R. E. See H. Volschenki. 48:193-197.

Sullivan, J. A. See D. C. Percival. 45:123-132, 133-140.

Suzuki, Y. See K. Ari'izumi. 45:312-318.
See M. Sato. 48:1-6.

Swartz, H. J. See E. W. Stover 48:26-32, 145-149.

Szychowski, J. A. See J. A. Wolpert. 47:21-24.

T

Tai, A. See G. Okamoto. 46:17-21.

Takahashi, K. See O. A. Antoce. 48:413-422.

Takayanagi, T., and K. Yokotsuka. Relationship between sucrose accumulation and sucrose-metabolizing enzymes in developing grapes. 48:403-407.

Tamantini, I. See S. Biricolti. 48:93-99.

Tanaka, H. See K. Yokotsuka. 44:371-377.

Taormino. S. P. See J. A. De Benedictis. 47:373-379.

Taureilles-Saurel, C., C. G. Romieu, J.-P. Robin, and C. Flanzy. Grape (*Vitis vinifera* L.) malate dehydrogenase. I. Intracellular compartmentation of the isoforms. 46:22-28.

Taureilles-Saurel, C., C. G. Romieu, J.-P. Robin, and C. Flanzy. Grape (*Vitis vinifera* L.) malate dehydrogenase. II. Characterization of the major mitochondrial and cytosolic isoforms and their role in ripening. 46:29-36.

Tchorbanov, B., G. Mitchev, G. Lazarova, and D. Popov. Studies on the secondary fermentation of low-alcohol sparkling apple wine. 44:93-98.

Teissedre, P. L., M. T. Cabanis, F. Champagnol, and J. C. Cabanis. Lead distribution in grape berries. 45:220-228.

Teixeira, A. R. See E. Dorrestein. 46:235-242.
See E. López-Tamames. 47:193-198.

Terra, M. M. See C. V. Pommer. 47:340-342.

Tesnière, C. M., C. Romieu, and J.-P. Robin. Grape *in vivo* protein synthesis: changes in response to anaerobiosis. 45:267-272.

_____ , C. Romieu, and M. E. Vayda. Changes in the gene expression of grapes in response to hypoxia.

This, P., C. Cuisset, and J. M. Boursiquot. Development of stable RAPD markers for the identification of grapevine rootstocks and the analysis of genetic relationships. 48:492-501. 44:445-451.
See J. P. Peros. 47:49-56.

Thomas, C. S., W. D. Gubler, M. W. Silacci, and R. Miller. Changes in elemental sulfur residues on Pinot noir and Cabernet Sauvignon grape berries during the growing season. 44:205-210.

_____ , R. B. Boulton, M. W. Silacci, and W. D. Gubler. The effect of elemental sulfur, yeast strain, and fermentation medium on hydrogen sulfide production during fermentation. 44:211-216.

Thorngate, J. H., III, and V. L. Singleton. Localization of procyanidins in grape seeds. 45:259-26.

_____ . The physiology of human sensory response to wine: A review. 48:271-279.

_____ , and V. L. Singleton. Reactions of monomeric and polymeric flavan-3-ols with monomeric pigment in model wine solutions. 45:349-352.

Toland, T. M., K.C. Fugelsang, and C. J. Muller. Methods for estimating protein instability in white wines: A comparison. 47:111-112.
See V. L. Wahlstrom. 47:225-226.

Torriani, S. See M. E. Guerzoni. 46:368-374.

Towey, J. P., and A. L. Waterhouse. Barrel-to-barrel variation of volatile oak extractives in barrel-fermented Chardonnay. 47:17-20.

_____ , and A. L. Waterhouse. The extraction of volatile compounds from French and American oak barrels in Chardonnay during three successive vintages. 47:163-172.

Traveso, C. See A. Vaamonde. 48:177-180.

Trollat, P. See P. Jeandet. 46:1-4.

Tsang, E. See G. J. Soleas. 48:169-176.

Tuiskunen, M., and P. Lehtonen. Determination of the alcoholic strength of grape and fruit wines by simple analytical methods. 48:220-224.

Turner, J. R. See S. Poni. 45:252-258.

U V

Uyemoto, J. K., C. R. Krag, and A. Rowhani. An improved purification procedure for grapevine leafroll associated viruses. 48:521-524.

Vaamonde, A., P. Sánchez, F. Vilariño, M. Pazo, and C. Traveso. On consistency of qualifications of winetasting panels. Application of multivariate statistical methods. 48:177-180.

Vaillant, H. See P. Formisyn. 48:345-351.

Valladao, M. See S. F. Price. 46:187-194.

Van Rooyen, T. J. See N. P. Jolly. 44:217-226.

van Vuuren, H. J. J., and L. M. T. Dicks. *Leuconostoc oenos:* A review. 44:99-112.
See H. Volschenki. 48:193-197.

Vasile, T. D. See C. G. Edwards. 45:49-55.

Vasserot, Y., S. Caillet, and A. Maujean. Study of anthocyanin adsorption by yeast lees. Effect of Some physicochemical parameters. 48:433-437.

Vasserot, Y. See S. Palacios. 48:525-526.

Vázquez Lasa, B. See M. Iñiguez Crespo. 45:460-463.

Vayda, M. E. See C. M. Tesnière. 44:445-451.

Vayssier, Y. See I. Nault. 46:357-362.

Verdegaal, P. S. See J. A. Wolpert. 46:437-441.

Vernhet, A., P. Pellerin, C. Prieur, J. Osmianski, and M. Moutounet. Charge properties of some grape and wine polysaccharide and polyphenolic fractions. 47:25-30.

Veto, L. J. See A. G. Reynolds. 47:421-428.

Viala, C. See P. Chatonnet. 48:443-448.

Viaux, L., C. Morard, B. Robillard, and B. Duteurtre. The impact of base wine filtration on Champagne foam behavior. 45:407-409.
See B. Robillard. 44:387-392.

Vicente, J. L. See J. C. Rivas-Gonzalo. 44:302-308.

Vicente-Beckett, V. A. See G. N. Chen. 45:305-311.

Vignes-Adler, M. See B. Robillard. 44:387-392.

Vignini, A. M. See S. Alessandri. 47:257-267.

Vignozzi, N. See S. Alessandri. 47:257-267.
See S. Biricolti. 48:93-99.

Vilariño, F. See A. Vaamonde. 48:177-180.

Viljoen, M. See H. Volschenki. 48:193-197.

Villa, A. See V. Gerbaux. 48:49-54.

Villalon Mire, M. See R. Gimenez Martinez. 47:441-446.

Vincent, O. See J. M. Salmon. 44:56-64.

Vivas, N., and Y. Glories. Role of oak wood ellagitannins in the oxidation process of red wines during aging. 47:103-107.

Viviani-Nauer, A., P. Hoffmann-Boller, and J. Gafner. *In vitro* detection of folpet and its degradation to phthalimide in aqueous solutions and

in yeast suspensions. 48:63-66.

_____ , P. Hoffmann-Boller, and J. Gafner. *In vivo* detection of folpet and its metabolite phthalimide in grape must and wine. 48:67-70.

Vivier, A. See F. Sauvageot. 48:187-192.

Volschenki, H., M. Viljoen, J. Grobler, F. Bauer, A. Lonvaud-Funel, M. Denrayolles, R. E. Subden, and H. J. J. van Vuuren. Malolactic fermentation in grape musts by a genetically engineered strain of *Saccharomyces cerevisiae*. 48:193-197.

Volschenk, C. G. See J. J. Hunter. 46:306-314.

Vonah, T. M. See M. G. Chisholm. 45:201-212.

Vrhovsek, U., S. Wendelin, and R. Eder. Effects of various vinification techniques on the concentration of *cis*- and *trans*-resveratrol and resveratrol glucoside isomers in wine. 48:214-219.

W

Wahlstrom, V. L., M. M. Osborn, K. C. Fugelsang, T. M. Toland, and C. J. Muller. Sensitivity of wine yeasts to fluoride. 47:225-226.

Walker, M. A., and L. Liu. The use of isozymes to identify 60 grapevine rootstocks (*Vitis* spp.). 46:299-305.

See L. Bavaresco. 45:273-277.

See W. Grzegorczyk. 48:157-159.

Walsh, T. M. See R. A. Hamman. 47:31-36.

Wample, R. L. A comparison of short- and long-term effects of mid-winter pruning on cold hardiness of Cabernet Sauvignon and Chardonnay buds. 45:388-392.

_____ Influence of pre- and post-treatment storage on budbreak of hot water treated cuttings of Cabernet Sauvignon. 44:153-158.

_____ . Influence of pre- and post-treatment storage on rooting of hot-water-treated cuttings of Cabernet Sauvignon. 48:131-136.

_____ , S. E. Spayd, R. G. Evans, and R. G. Stevens. Nitrogen fertilization of White Riesling grapes in Washington: Nitrogen seasonal effects on bud cold hardiness and carbohydrate reserves. 44:159-167.

See A. M. Morrell. 46:243-249; 48:459-464, 465-470.

See A. Naor. 45:333-337.

See S. E. Spayd. 44:378-386.

Wardle, D. A. See A. G. Reynolds. 44:173-179; 45:435-443, 444-451, 452-459; 46:88-97, 542-558; 47:63-76, 77-92, 329-339, 421-428; 48:449-458.

Waterhouse, A. L. See T. S. Collins. 48:280-284.

See D. M. Golberg. 46:159-165.

See J. P. Towey. 47:17-20, 163-172.

Watkins, S. J. See J. Bakker. 47:37-41.

Watson, B. T. See S. F. Price. 46:187-194.

See A. G. Reynolds. 45:452-459; 47:329-339.

See J. D. Wightman. 48:39-48.

Weber, E. See J. A. Wolpert. 45:393-400.

Webster, D. R., C. G. Edwards, S. E. Spayd, J. C. Peterson, and B. J. Seymour. Influence of vineyard nitrogen fertilization on the concentrations of monoterpenes, higher alcohols, and esters in aged Riesling wines. 44:275-824.

Weeden, N. F. See B. I. Reisch. 44:441-444.

Wegener, G. See A. Gent. 48:423-427.

Wells, D. S. See R. J. Folwell. 45:63-70.

Wendelin, S. See U. Vrhovsek. 48:214-219.

Wightman, J. D., S. F. Price, B. T. Watson, and R. E. Wrolstad. Some effects of processing enzymes on anthocyanins and phenolics in Pinot noir and Cabernet Sauvignon wines. 48:39-48.

Wilker, K. L., and M. R. Dharmadhikari Treatment of barrel wood infected with acetic acid bacteria. 48:516-520

Williams, L. E. See A. Ezzahouani. 46:559-563.

Williams, P. J. See I. L. Francis. 45:243-251.

See A. J. McKinnon. 46:509-517.

See M. A. Sefton. 44:359-370; 45:429-434.

Wolpert, J. A. Performance of Zinfandel and Primitivo clones in a warm climate. 47:124-126.

_____ , A. N. Kasimatis, and P. S. Verdegaal. Viticultural performance of seven Cabernet Sauvignon clones in the Northern San Joaquin Valley, California. 46:437-441.

_____ , A. N. Kasimatis, and E. Weber. Field performance of six Chardonnay clones in the Napa Valley. 45:393-400.

_____ , J. A. Szychowski, J. S. Semancik. Effect of viroids on growth, yield, and maturity indices of Cabernet Sauvignon grapevines. 47:21-24.

Wrolstad, R. E. See J. D. Wightman. 48:39-48.

X Y Z

Xirau-Vayreda, M. See J. Garcia-Cazorla. 45:338-340.

Yagi, Y. See K. Ari'izumi. 45:312-318.

See M. Sato. 48:1-6.

Yajima, M. See K. Yokotsuka. 48:471-481.

Yan, J. See D. M. Golberg. 46:159-165.

See G. J. Soleas. 46:346-352.

Yerle, S. See A. G. Reynolds. 47:329-339.

Yokotsuka, K., M. Matsunaga, and V. L. Singleton. Comparison of composition of Koshu white wines fermented in oak barrels and plastic tanks. 45:11-16.

_____ , A. Otaki, A. Naitoh, and H. Tanaka. Controlled simultaneous deacidification and alcohol fermentation of a high-acid grape must using two immobilized yeasts, *Schizosaccharomyces pombe*and *Saccharomyces cerevisiae*. 44:371-377.

_____ , and V. L. Singleton. Disappearance of anthocyanins as grape juice is prepared and oxidized with PPO and PPO substrates. 48:13-25.

_____ , and V. L. Singleton. Glycoproteins: Characterization in a hybrid grape variety (Muscat Bailey A) juice, fermenting must, and resultant red wine. 48:100-114.

_____ , and V. L. Singleton. Grape seed nitrogenous components and possible contribution to wines. 47:268-278.

_____ , and V. L. Singleton. Interactive precipitation between phenolic fractions and peptides in wine-like model solutions: turbidity, particle size, and residual content as influenced by pH, temperature and peptide concentration. 46:329-338.

_____ , M. Yajima, and T. Matsudo. Production of bottle-fermented sparkling wine using yeast immobilized in double-layer gel beads or strands. 48:471-481.

See T. Okuda. 47:37-41.

See T. Takayanagi. 48:403-407.

Yoshimura, M. See T. J. Burr. 47:119-123.

Zaczkiewicz, S. M. See M. G. Chisholm. 46:56-62.

Zagatto, E. A. G. See A. N. Araújo. 48:428-432.

Zambonelli, C. See L. Bertolini. 47:343-345.

See P. Giudici. 44:17-21; 46:143-147.

Zhang, B.-L. See M. P. Day. 45:79-85.

Zironi, R., E. Celotti , and F. Battistutta. Research for a marker of the hyperoxygenation treatment of musts for the production of white wines. 48:150-156.

Zoecklein, B. W., J. E. Marcy, and Y. Jasinski. Effect of fermentation, storage *sur lie* or post-fermentation thermal processing on White Riesling (*Vitis vinifera* L.) glycoconjugates. 48:397-402.

Zweifel, W. See W. Koblet. 45:181-187.

Volume 44, 45, 46, 47, 48
(1993, 1994, 1995, 1996, 1997)

Subject Index

Abbreviations and symbols for AJEV manuscripts. 48:530-532.

Abscisic acid. contents in Kyoho vines in relation to budbreak induction by water stress. 48:115-120.

Acclimation. nitrogen fertilization effects on White Riesling. 44:159-167.

Acetaldehyde. -flavanol condensation products in red wine. 48:370-373.
production. grape must lees and insoluble materials effects on. 44:86-92.
in white wines from high acid must. 44:371-377.

Acetic acid bacteria. barrel wood treatment. 48:516-520.

Acetic acid production. by yeasts. grape must lees and insoluble materials effects on. 44:86-92.
inhibition by lysozyme addition. 48:49-54.
stuck fermentation. 46:278-280.

Acetoin. formation by yeasts during fermentation. 46:134-137.

Acid(s). See also specific acids.
amperometric biosensors for assays of L-malic and D-lactic acids in wines. 47:11-16.
fatty. from lipid fractions of leaves and tissues of Cabernet Sauvignon grapes. 44:180-186.
hydrolysis. 44:359-370.
organic. yeast growth inhibition. 48:413-422.
polysaccharides. 46:564-570.
urease. removal of ethyl carbamate precursors. 45:17-24.

Acidification of sherry musts. 44:400-404.

Activation energy to form ethyl carbamate in wines. 45:17-24.

ADH activity. 44:445-451.

Adsorption. Anthocyanin(s). by yeast lees. 48:433-437.
effect on sherry wine color. 46:138-142.

Aerobic metabolism of flor yeasts in sherry. 48:71-79.

Aging. distilled spirits. 46:98-115.
wine. accelerated. sensory effects on Chardonnay and Semillon wines. 45:243-251.
aroma changes in aged Vidal blanc wine. 46:56-62.
barrel aging. 45:11-16, 429-434; 46:98-115; 47:103-107, 163-172.
biological aging of sherry. 48:71-79. 160-168.
bottle aging. utilization of free amino acids. 47:313-322.
yeast immobilized in double-layer gel beads or strands. 48:471-481.
carbonic maceration effects on aroma. 47:134-144.
color. correlation to flavonoids. 46:295-298.
condensation products. 48:370-373.
ellagitannin effects on oxidation. 47:103-107.
ethylphenol content of red wine. 46:463-468.
oak. 45:11-16, 192-200, 429-434; 46:67-74; 46:98-115; 47:103-107, 163-182, 441-446.
phenolic compounds. 47:441-446.
tank aging. 45:11-16.
wood heat treatment effects on spirits. 47:441-446.

Agrobacterium radiobacter. to suppress *Agrobacterium tumefaciens* tumor formation. 44:241-248, 249-254.

Agrobacterium tumefaciens. 44:22-26; 44:153-158, 241-248, 249-254; 45:213-219; 46:499-508; 47:145-151; 48:131-136.

Agrobacterium vitis. biological control of crown gall. 45:213-219; 46:499-508; 48:26-32.
DNA fingerprinting. 47:145-151.
electrolyte leakage. 48:145-149.
heat treatment effects on survival. 47:119-123.
polygalacturonase. 48:145-149.

Agrocins. 44:241-248, 49-54.

Albana vines. virus effects on field performance. 48:7-12.

Albariño wine. aroma. 47:206-216.

Alcohol(s). yeast growth inhibition. 48:413-422.

Alcoholic fermentation. See also Fermentation.
analysis of yeast populations during. 48:339-344.
colloid concentration influence on yeast macromolecule production. 46:486-492.
diacetyl formation and degradation. 46:442-448.
effects of must lees and insoluble materials on rate. 44:86-92.
folpet degradation to phthalimide. 48:67-70.
fructose uptake capacity of yeasts effects on. 46:175-180.
kinetics. 44:127-133, 134-138; 47:363-368, 429-434.
lactic acid bacteria/yeast effects on. 47:1-10.
must filtration effects on amino acid utilization. 47:313-322.
n-propanol production during. 44:17-21.
simultaneous deacidification. 44:371-377.
sugar transport inhibition effect on production rate. 44:56-64.
yeast/lactic acid bacteria effects on. 47:1-10.

Aldononitrile acetates in wine. analysis using capillary gas liquid chromatography. 45:229-234.

Aldoses in wine. analysis using capillary gas liquid chromatography. 45:229-234.

Alpha zones. 44:409-340.

American oak. 46:424-428.
See also Oak.

Amidohydrolase. 48:137-144.

Amines. biogenic. determination by HPLC. 45:460-463; 47:127-133.
lysozyme control. 48:49-54.

Amino acid(s). composition in grape juice from 12 Washington *V. vinifera* cultivars. 47:389-402.
concentrations in Koshu *sur lie* wine. 48:1-6.
in red wines. 48:100-114.
contribution to urea formation. 44:35-40.
determination in wines. 47:127-133; 48:225-228.
distribution in soluble proteins. 45:410-416.
ethyl esters formation by yeasts. 44:41-48; 46:49-55.
extraction from grape seeds. 47:268-278.
from seeds to wine. 47:268-278.
influence on calcium tartrate precipitation. 46:509-513.
N-carbamyl. identification in wines and yeast cells. 44:49-55.
Port wine. 47:37-41.
synthesis in grape leaves and berries. 46:37-42.
uptake by yeasts. 44:35-40, 371-377.
utilization by *S. cerevisiae* yeasts. 46:75-83.
utilization during fermentation and bottle-aging of wine. 47:313-322.
verification of wine origin. 47:410-414.

Ammonia. from arginine. 44:35-40.

Ammonium. grapevine tissue content. 47:173-180.
incubation induced inflorescence necrosis. 45:155-160.
sulfate. precipitation. 48:100-114.
utilization by *S. cerevisiae* yeasts. 46:75-83.

Ampelography. Cynthiana and Norton cultivars. 44:435-440.
rootstock. 46:299-305.
Vitis leaves. 47:257-267.

Ampelometry. biometrical data from *Vitis* spp. leaves. 47:257-267.

Amperometric biosensors for assays of L-malic and D-lactic acids in wines. 47:11-16.

Anaerobic. heating. 45:243-251.
metabolism. phenolic compounds. 44:13-16.

Anaerobiosis. 44:445-451; 47:134-144.
protein synthesis. *in vivo* response to. 45:267-272.

Analysis. See also specific analysis.
alcohol content of wine. 48:214-219.
amino acids. 47:127-133.
biplot. for classification of wines. 44:302-308.
dimethylsulfide and dimethylsulfoxide in wine. 44:327-332.
ethanol content in wine by capillary electrophoresis. 48:280-284.
furaneol determination for differentiation of white wines. 46:181-186.
glycerol content of wine. 47:193-198.
glycoproteins. 48:100-114.
headspace. to measure interactions between yeast walls and aroma substances. 45:29-33.
isozyme. of *Eutypa lata*. 47:49-56.
organic acids. 47:193-198.
potentiometric stripping determination of lead, cadmium, and zinc in wine. 45:305-311.
RAPD. of *Agrobacterium* biovars. 47:145-151.
of *Eutypa lata*. 47:49-56.
sequential injection. determination of L-lactate in wine. 48:428-432.
soluble protein. 46:235-242.
sugars in wine. 47:193-198.
total acidity. 44:118-120.
volatile sulfur compounds. 45:341-344.

Anisothermal conditions. alcoholic fermentation kinetics. 44:127-133, 134-138.

Anthocyanin(s). adsorption by yeast lees. 48:433-437.
anaerobic metabolism effects on in grape berry skins. 44:13-16.
changes during fermentation and post-fermentation standing of musts. 45:161-166; 48:225-228.
characterization in Reliance grapes. 46:339-345.
effects on color of wood-aged red wines. 46:295-298.
effects on polymeric phenols in wines. 45:349-352.
pigments. 48:39-48.
polymers. circular dichroism and spectroscopic studies in red wines. 47:323-328.
polyphenoloxidase effects on color. 48:13-25.
processing enzyme effects on. 48:39-48.
skin fermentation time effects on. 45:56-62; 47:323-328.
-tannin interactions. 45:349-352.
use in verification of wine origin. 47:410-414.
virus presence effects in berry and leaf. 48:438-442.

Antibiosis. 46:499-508.

Antifreeze. evaluation of Frostgard. 44:232-235.

Antifungal agent. 46:159-165.

Antioxidant(s). activity in grape pomace. 47:369-372.

Appellation of origin of wines. 44:302-308.

Apple wine, low alcohol sparkling. 44:93-98.

Arabinogalactan. 47:108-110.
charge properties. 47:25-30.

α-Arabinosidase activities of yeast strains. 45:291-296.

Arginine. catabolism. 45:235-242.
concentration in 12 Washington grape juices. 47:389-402.
synthesis in grapevine leaves and berries. 46:37-42.

Aroma, wine. See also Sensory.
basal leaf removal effects on. 46:542-558; 47:77-92.
canopy management effects on. 47:63-76, 77-92.
carbonic maceration effects on. 47:134-144.
comparisons using GC-olfactometry. 45:201-212; 46:56-62.
descriptive analysis. 46:5-9.
ethyl anthranilate. 46:392-398.
ethyl cinnamate. 46:392-398.
ethylphenols. 48:443-448.
ethyl 2,3-dihydrocinnamate. 46:392-398.
methyl anthranilate. 46:392-398.
interactions between yeast walls and aroma substances. 45:29-33.
oak effects on. 45:429-434.
odor-active compounds. *bis*(2-hydroxyethyl) disulfide. 46:84-87.
2-mercaptoethanol. 46:84-87.
polyphenolic components of red wines. 48:443-448.
physiology of human sensory response to. 48:271-279.
Saccharomyces and non-*Saccharomyces* contribution to aroma components. 47:206-216.
skin contact time relationship to. 47:309-312.
storage temperature effects on Chardonnay. 48:310-316.
threshold of *cis*- and *trans*-ß-methyl-γ-octalactone. 46:292-294.
Vidal blanc wine. 46:56-62.
volatile sulfur compounds. 45:341-344; 46:84-87.

Aromatic composition of Muscat grapes. 48:181-186.

Ascorbic acid effects on post-disgorgement oxidative stability of sparkling wine. 44:227-231.

Ashing. to determine copper and iron in must. 45:25-28.

Assay. amperometric biosensors for L-malic and D-lactic acids in wines. 47:11-16.
Bradford. protein measurement. 48:303-309.
resveratrol. 48:169-176.

Astringency in wine. See also Sensory.
time-intensity studies. 46:128-133.

ATP generation during malolactic fermentation. 46:319-323.

Author index. 48:533-546.

Authors' guide. 48:527-532.

B

Bacterial antagonist to control crown gall. 44:241-248, 249-254.

Barrel(s). aging. See also Aging.
aromatic composition of wine. 47:134-144.
brandies. lactones from oak. 46:419-423, 424-428.
cis-ß-methyl-γ-octalactone aroma threshold. 46:292-294.
color/flavonoid correlation. 46:295-298.
comparison of composition of oak barrel and plastic tank aged white wine. 45:11-16.
phenolic composition of Hungarian red wine. 46:67-74.
phenols influence on wine flavor. 45:429-434; 47:441-446.
charring effects on lactones. 46:419-423.
ellagitannin role in oxidation of red wine. 47:103-107.
-fermented Chardonnay wines. 47:17-20.
infected with acetic acid bacteria. 48:516-520.
lactone content of French and American oak. 46:424-428.
old and new wood effects on aromatic composition. 47:134-144.
relationship between geographical origin and chemical composition of oak wood. 45:192-200.
sanitizing. 48:516-520.
toasting. effect on lactones. 46:419-423.
effect on phenolic compounds. 47:441-446.
variations of oak extractives in Chardonnay. 47:17-20, 163-172.
wood anatomy variations effects. 48:502-508, 509-515.
wood heat treatments effects on wine spirit mixtures. 47:441-446.

Base wine. relationship to foam characteristics. 46:518-524.

Beer's law. 46:389-391.

Bentonite. effect on color of Seyval blanc juice and wine. 45:417-422.

Benzoic aldehydes. wood treatment and temperature effects on in wine spirit mixtures. 47:441-446.

Berry, grape. See also Grape(s).
anaerobic metabolism effects on phenolic compounds. 44:13-16.
arginine synthesis. 46:37-42.
browning. 44:8-12.
calcium content. 44:187-192.
composition. canopy management influence on Pinot noir. 45:181-187, 188-191.
cluster thinning influence on Flame Seedless. 46:429-436.
harvest date effects on. 46:493-498.
nitrogen fertilization effects on. 45:377-387.
pruning method influence on. 47:291-296.
Rupestris virus effects on. 48:449-458.
crop load effect on growth. 45:252-258.
elemental sulfur residues. 44:205-210.
fatty acids from lipid fractions of tissues. 44:180-186.
fungicide residues. 44:205-210.

glutathione content. 44:8-12, 333-338.
hand pruning effects on composition and yield. 47:291-296.
harvest date effects on Thompson Seedless. 46:493-498.
internal browning. 44:8-12.
lead distribution. 45:220-228.
mechanical pruning effects on composition and yield. 47:291-296.
phenolics. 44:13-16.
potassium. 44:187-192.
pulp. lead distribution. 45:220-228.
raisins. harvest date effects on quality. 46:493-498.
resveratrol concentration. 47:57-62, 93-99, 287-290
ripening. 44:187-192, 193-197; 46:29-36.
glutathione increases. 44:333-338.
water stress effects on. 44:193-197.
xylem discontinuity. 44:187-192, 193-197.
RNA. isolation from. 47:181-185.
yield and quality at different ripening stages. 46:315-318.
sampling for *Botrytis cinerea*. 44:261-265.
seedlessness. 47:152-156.
set. gibberellic acid effects on. 47:152-156.
streptomycin effects on. 47:152-156.
skin. lead distribution. 45:220-228.
tartaric acid. 44:13-16.
yeast presence on berry surfaces. 47:435-440.

Beta zones. 44:409-430.

Biannual cropping. 47:157-162.

Biocatalyst influence on wine quality. 44:371-377.

Biogenic amines in wines. 45:460-463; 47:127-133.

Biological control of crown gall. 45:213-219; 46:499-508.

Biplot analysis for geographical classification of wines. 44:302-308.

Bis-[trimethylsilyl]-trifluoroacetamide derivatization of resveratrol. 46:346-352.

Bismuth-containing indicator for predicting H_2S-production potential of wine yeast. 46:269-273.

Bitterness in wine. See also Sensory.
ethanol, catechin concentration, and pH effect on. 45:6-10.
time-intensity studies. 46:128-133.

Bobal cultivar. identification of wines. 48:285-291.

Botrytis cinerea. canopy configuration effects on Seyval blanc. 48:482-491.
control of. by leaf removal. 45:133-140.
immunoassay quantification. 45:300-304.
relationship with resveratrol concentration. 46:1-4; 47:93-99.
sampling for in harvested wine grapes. 44:261-265.
sulfur dioxide fumigation for control. 48:121-124.

Bottle-fermented sparkling wine. yeast immobilized in double-layer gel beads or strands. 48:471-481.

Bradford method of protein measurement in Champagne wines. path analysis of Okanagan Riesling vines. 44:173-179.

Brandy. barrel aging. 46:98-115.
cis- and *trans*-ß-methyl-γ-octalactone. aroma threshold. 46:292-294.
contents in French and American oaks. 46:424-428.
quantification. 46:419-423.
relationship between geographical origin and chemical composition of oak wood. 45:192-200.
volatile sulfur compounds detection. 48:333-338.

Brettanomyces/Dekkera spp. effect on ethylphenol content of red wine. 46:463-468; . 48:443-448.

Browning. berry. 44:8-12.
juice. 45:417-422.
wine. 45:43-48, 417-422; 46:274-277.

Bud, grapevine. See also Grapevine.
differentiation. 45:188-191.
fruitfulness. leafhopper feeding impact on. 48:291-302.
initiation. 45:188-191.
mortality. 47:119-123.

Budbreak. delay. hot water treated cuttings of Cabernet Sauvignon. 44:153-158.
induced. by water stress. 48:115-120.

Bunch rot. See *Botrytis cinerea*.

2,3-Butanediol. formation and degradation during fermentation. 46:442-448.
isomers formed during fermentation by yeasts and lactic acid bacteria. 46:134-137.
malolactic fermentation influence on concentration. 46:385-388.

C

^{14}C-assimilates. 44:1-7.

Cabernet franc grapevines. response to minimal pruning. 44:81-85.
response to virus inoculation. 44:81-85.

Cabernet Sauvignon grapevines. See also Grapevine(s).
budbreak. 44:153-158.
clonal selection. 46:437-441.
cold hardiness of buds. 45:388-392.
disease. 47:21-24.
heat tolerance of dormant cuttings. 44:153-158.
hot water treatment of cuttings. 44:153-158.
light environment within canopies. 46:209-218, 219-226.
midwinter pruning. 45:388-392.
phosphorus availability. scion and rootstock influence on shoot growth, leaf area, and petiole P. 47:217-224.
photosynthetic photon flux density (PPFD). 46:209-218, 219-226.
polyamines in fruiting cuttings. 48:80-84, 85-92.
potassium nutrition. 48:85-92.
root distribution. 45:345-348.
rooting of hot-water-treated cuttings. 48:131-136.
viroids effect on. 47:21-24.

Cabernet Sauvignon wine. anthocyanin polymer structures. 47:323-328.
interactions between *L. oenos* and *Pediococcus* spp. during vinification. 45:49-55.
processing effects on phenolics and color. 47:279-286.
processing enzymes effects on anthocyanins and phenolics. 48:39-48.
resveratrol glucosides. 47:415-420.
trans-resveratrol concentration in: 46:159-165.
vine defoliation effects on quality and color. 46:306-314.

Cadmium in wine. potentiometric stripping determination. 45:305-311.

Calcium alginate. gel entrapped *Schizosaccharomyces pombe* for deacidification of wine. 44:371-377.

Calcium ion selective electrode. 46:509-513.

Calcium tartrate. crystallization kinetics. 44:65-75; 46:509-513.
spontaneous precipitation in a model wine solution. 46:509-513.

Callus. formation. 44:22-26.

Calorimetry. heat formation during malolactic fermentation. 48:423-427.
yeast growth inhibition by alcohols and organic acids. 48:413-422.

Candida. characterization by DNA. 46:204-208; 48:339-344.

Canopy management. See also Grapevine, Trellising.
berry composition. Chancellor. 46:88-97.
hand and mechanized pruning effects on. 47:291-296.
Botrytis cinerea control. 44:409-430.
Cabernet franc vines. 44:81-85.
Cabernet Sauvignon vines. 46:209-218, 219-226; 46:306-314.
cane adjustment effects on raisins. 45:141-149.
Chancellor vines. 46:88-97.
cluster sun exposure effects on quercetin. 46:187-194.
defoliation. effects on fruit composition. 46:306-314.
division. 47:63-76, 329-339.
effects of carbohydrate accumulation. 44:81-85.
effects on ^{14}C-assimilate partitioning. 44:1-7.
effects of nitrogen accumulation. 44:81-85, 409-430.
fruitfulness. effects on. 44:409-430.
Gewürztraminer vines. 47:77-92.
intercepted radiation. 46:389-391.
leaf. area estimation method. 46:389-391.
gas exchange. 46:227-234.
removal. 44:409-430; 45:123-132, 133-140, 173-180, 181-187, 188-191.
light environment within canopies. 46:209-218, 219-226, 306-314.

midwinter pruning effects on cold hardiness. 45:388-392.
Muscat grapes. sun exposure effects on aromatic composition. 48:181-186.
partial defoliation. effects on root development and distribution. 46:306-314.
Pinot noir vines. 47:329-339.
photosynthesis. 46:227-234, 306-314, 324-328.
photosynthetic photon flux density (PPFD). 46:209-218, 219-226.
pruning level effects on raisins. 45:141-149.
radiation interception. 46:389-391.
Riesling vines. 45:123-132, 133-140; 47:63-76.
shading effects on vine morphology. 46:227-234.
shoot density. 47:329-339.
shoot orientation. 46:324-328.
sun exposure effects on aromatic composition. 48:181-186.
sunflecks. 46:209-218, 219-226.
vine performance. 46:88-97.

Canopy microclimate. See Canopy management.

Carbohydrate(s), in grapevines. accumulation in Cabernet franc vines. 44:81-85.
partitioning. 44:435-440.
reserves. 44:159-167; 48:115-120.
seasonal changes in Chardonnay and Riesling. 47:31-36.
in wines. analysis using capillary gas liquid chromatography. 45:229-234.
from wood during maturation. 46:98-115.

Carbonation effects on grape juices and grape-apple blends. 44:320-326.

Carbonic maceration. aromatic composition of wine. 47:134-144.
effect on procyanidin composition of Grenache blanc wines. 44:168-172.

Carboxylic acid(s). skin contact effects on in wine. 47:309-312.

Carboxylation efficiency of vines. 45:297-304.

Carboxypepsidase. 48:1-6.

Carignane grapes. anaerobic metabolism effects on phenolic compounds. 44:13-16.

Casein. effects on muscadine wines. 46:155-158.

Catechin(s). anthocyanidin interaction. 45:349-352.
concentration in wine. effect on sourness and bitterness. 45:6-10.
supplementary seed addition during fermentation to increase. 46:363-367.
virus presence effects on berry and leaf. 48:438-442.

Catecholase activity. fining treatment effects on. 45:417-422.

Cavas. foam characteristics. 46:518-524.

Cell wall elasticity in leaf. 48:352-356.

Certified brand of origin. 47:410-414.

Chalcone synthase. 47:181-185.

Chambourcin grapevines. morphology and dry matter partitioning. 47:380-388.

Chambourcin wine. processing effects on phenolics and color. 47:279-286.

Champagne wine. foaming proteins in base wine. 44:297-301.
must oxidation during pressing. 44:393-399.
protein measurement. 48:303-309.

Chancellor grapevines. canopy management 46:88-97.

Characterization. of anthocyanins in Reliance grapes by HPLC. 46:339-345.
of Palomino fino grapes. 48:317-322.
of Penedès varietal musts. 46:283-291.
white wines. 46:529-541.

Chardonnay grapevines. carbohydrate seasonal changes. 47:31-36.
clonal comparison. 45:393-400.
cold hardiness of buds. 45:388-392.
methanol toxicity. 47:297-300.
midwinter pruning. 45:388-392.
soluble sugars. 47:31-36.

Chardonnay juice. volatile composition. 44:359-370.

Chardonnay wine. diacetyl concentration. 46:385-388.
sensory effects of thermal processing on Chardonnay and Semillon. 45:243-251.
storage temperature effects on aroma. 48:310-316.
volatile oak extractives. 47:17-20, 163-172.

Charge properties of grape and wine polysaccharides and polyphenolic fractions. 47:25-30.

Charm analysis. of odorants of Pinot noir from Burgundy. 46:392-398.

Chemiluminescence. 48:333-338.

Chenin blanc grapevines. phosphorus availability, scion and rootstock influence on shoot growth, leaf area, and petiole P. 47:217-224.

Chirality. ß-methyl-γ-octalactone. 46:419-423.

Chlorophyll. 45:173-180; 46:227-234; 46:375-379.

Chromatic parameters of color change in sherry. 46:138-142.

Chromatography, capillary gas liquid. wine carbohydrate analysis. 45:229-234.

Chromatography, fast protein liquid. soluble protein analysis. 46:235-242.

Chromatography, gas. acetate content of wine. 47:309-312.
fatty acid content of wine. 47:309-312.
higher alcohol quantification. 47:309-312.
-mass spectrometry. analysis of resveratrol in wine and juice. 46:346-352.
multidimensional. ß-methyl-γ-octalactone. 46:419-423, 424-428.
-olfactometry. comparison of French-American hybrid wines with White Riesling. 45:201-212.
determination of changes in sensory characteristics in aged Vidal blanc wines. 46:56-62.
-sniffing analysis of the *cis*-ß-methyl-γ-octalactone aroma threshold. 46:292-294.
sulfur compounds analysis. 45:341-344; 48:333-338.
1,2,3,4-tetrahydro-ß-carboline-3-carboxylic acids identification in wine samples. 45:92-101.
trans-resveratrol measurement in wines. 46:159-165; 48:169-176.
volatile compounds analysis. 45:341-344; 47:309-312.

Chromatography, high performance liquid (HPLC). amino acid determination. 48:229-235.
anthocyanins analysis. 46:339-345.
carbohydrate seasonal changes determination in *Vitis vinifera*. 47:31-36.
carboxylic acids analysis in wine. 47:309-312.
determination of amines and amino acids in wines. 47:127-133.
-electrochemical determination of oxalates in cork. 46:63-66.
ellagitannin determination in oak wood. 46:262-268.
ethanol analysis in wine. 47:309-312.
folpet detection in aqueous solutions and yeast suspensions. 48:63-66.
in must and wine. 48:67-70.
glycerol analysis in wine. 47:309-312.
glycoproteins. 48:100-114.
optimized with polarity gradient elution. 45:460-463.
peptide analysis in wine. 45:167-172.
phenolic(s). compositional changes in Hungarian red wine during phenolic determination. 48:438-442.
oak aging. 46:67-74.
separation. 45:1-5.
procyanidin composition of wine. 44:168-172.
resveratrol . 47:415-420; 48:169-176, 214-219.
sugar and organic acid determinations in wines. 47:193-198, 309-312.
1,2,3,4-tetrahydro-ß-carboline-3-carboxylic acids identification in wine samples. 45:92-101.

Chromatography, ion. anion content determination. 44:292-296.

Chromatography, paper (PC). anthocyanin analysis. 46:339-345.

Chromatography, thermal desorption-gas. 47:134-144.

Chromatography, thin layer (TLC). anthocyanin analysis. 46:339-345.

Cinnamic aldehydes. wood treatment and temperature effects on in wine spirit mixtures. 47:441-446.

Circular dichroism. study of anthocyanin polymer structures. 47:323-328.

cis-ß-methyl-γ-octalactone. aroma threshold. 46:292-294.

Citric acid. -diacetyl production relationship. 46:442-448.

Citrulline. production from arginine degradation. 45:235-242.
reaction with ethanol in ethyl carbamate formation. 44:309-312.

Clarification, must. 44:452-458; 47:313-322.
vacuum filtration. 47:313-322.

Classification. of oak origins. relationship between geographical origin and chemical composition of oak wood. 45:192-200.
of wine origins. 47:410-414.

Climate. effects on grape composition and wine quality. 44:409-430.
relationship to organic acids, sugars, and glycerol content of white wine. 47:193-198.

Clone(s). Cabernet Sauvignon. 46:437-441.
selection. agronomic ,enological performances. 48:438-442.
evaluation of Chardonnay. 45:393-400;
Nebbiolo. 48:438-442.
Primativo. 47:124-126.
Zinfandel. 47:124-126.

Closteroviruses. detection and localization of grapevine leafroll. 47:199-205; 47:239-243.

Cluster. exposure. influence on monoterpenes and wine olfactory evaluation of Golden Muscat. 44:198-204.
thinning. effect on composition and descriptive analysis of wine. 47:329-339.

Cognac aging. 46:98-115.
volatile sulfur compounds. 48:333-338.

Cold hardiness, grapevine. Cabernet Sauvignon. 44:153-158.
Chardonnay. 47:31-36.
nitrogen fertilization effects on. 44:159-167.
Riesling. 47:31-36.
seasonal deacclimation patterns. 47:100-102.

Colloids. influence on yeast macromolecule production. 46:486-492.

Color, grape. anthocyanins in Reliance. 46:346-352.

Color, juice. 45:113-116; 417-422.
polyphenoloxidase effects on. 48:13-25.
processing effects on. 47:279-286.

Color, wine. See also Anthocyanin, Browning.
changes during simultaneous yeast/bacterial fermentation and environmental factors affecting. 45:43-48.
colorimetric parameters for red wines. 46:353-356.
fining treatment effects on. 45:417-422; 46:155-158.
flavonoids effects on. 46:295-298.
measurement. 48:357-363, 364-369.
partial defoliation effects on. 46:306-314.
processing effects on. 47:279-286.
sherry. 46:138-142.

Colorimetric. assay. flavonoid phenols in white wine. 46:274-277.
parameters. for red wines. 46:353-356.

Compartmentation of malate dehydrogenase isoforms in grape berries. 46:22-28.

Concord grapevines. forecasting production. 45:63-69.
gas exchange and water relations. 45:333-337.
leafhopper feeding impact on yield and juice quality. 48:291-302.

Concord juice. carbonation and ethyl maltol effects on quality. 44:320-326.
leafhopper feeding impact on juice quality. 48:291-302.

Condensation products in red wine. 48:370-373.

Cooperage. variations in volatile oak extractives. 47:17-20.

Copper. determination in must by wet and dry ashing. 45:25-28.
influence on wine oxidation. 46:380-374.

Cork(s). oxalates in. 46:63-66.
volatile components. 45:401-406.

Crop load. influence on dry matter partitioning. 44:139-147; 46:469-447, 478-485; 47:380-388.
influence on photosynthesis. 44:139-147; 46:469-447, 478-485
influence on reproductive and vegetative response of mature vines. 44:435-440.
influence on wine quality and grape composition. 44:409-430.

Crown gall. 44:22-26, 153-158, 241-248; 47:145-151; 48:26-32.
biological control. 45:213-219; 46:499-508.
electrolyte leakage. 48:145-149.
genetic analysis. 47:145-151.
heat treatment effects on survival. 47:119-123.
hot water treatment of dormant cuttings. 48:131-136.
resistance. 48:145-149.

Cryoprotectant. evaluation of Frostgard. 44:232-235.

Cryotolerant strains of *S. cerevisiae* to improve wine composition. 46:143-147.

Crystallization kinetics of calcium tartrate. 44:65-75; 46:509-513.

Cultivar. identification by DNA fingerprinting. 44:266-274; 45:102-106.

Cytokinins. effects on gas exchange interactions of Sangiovese. 45:71-78.

D

Dagger nematode. establishing in dual culture with grape. 45:273-277.

Daktulosphaira vitifoliae. See also Phylloxera.
host utilization. 47:373-379.

Damascenone. in Chardonnay juice. 44:359-370.

Deacidification of wine. 44:113-117; 44:371-377.

Decarboxylation. of ferulic and *p*-coumaric acids by lactic acid bacteria. 44:76-80.

Defoliation. effects on gas exchange in Pinot noir. 45:173-180.
effects on grape composition. 46:306-314.
effects on root development and distribution. 46:306-314.
effects on vine growth. 45:188-191.
effects on wine quality. 46:306-314.
effects on yield and fruit composition in Pinot noir. 45:181-187, 188-191.

Deformability, berry. 44:187-192, 193-197.

Derivatization. amino acids. 48:229-235.

Descriptive sensory analysis. See also Sensory.
fruit environment and crop levels effect on wine. 47:329-339.
of Pinot noir wine. 47:329-339.
of Spanish white wines. 46:5-9.
of table grapes. 47:301-308.
storage temperature effects on Chardonnay. 48:310-316.

Dessert wines. alcoholic strength determination. 48:220-224.

Dessèshement de la rafle. 46:579-580.

Diacetyl in wine. formation and degradation during fermentation. 46:442-448.
malolactic fermentation influence on concentration. 46:385-388, 442-448.

Diaminopropane. in fruiting cuttings. 48:80-84, 85-92.

Dicarboxymidic fungicide residues in grapes, must, and wine. 45:338-340.

Dietary fiber. grape pomace potential as a food ingredient. 48:328-332.

Differentiation. between wines of two close viticultural zones. 48:285-291.
of Penedès varietal musts. 46:283-291.
white wines. 46: 529-541.

4-(Dimethylamino)-cinnamaldehyde. evaluation of flavonoid phenols in white wine. 46:274-277.

Dimethylsulfide in wine. 44:327-332; 45:341-344.

Dimethylsulfoxide in wine. 44:327-332; 45:341-344.

Diode array detection. phenolic composition changes in Hungarian red wine during oak aging. 46:67-74.

Disaccharides in wine. 45:229-234.

Discoloration in sherry wines. 46:138-142.

Discriminant analysis. anthocyanins, flavonols, and color parameters. 46:295-298.
biometrical data from *Vitis* leaves. 47:257-267.

Disease, grapevine. See also specific disease.

Agrobacterium vitis. biocontrol of. 46:499-508; 48:26-32.
genetic analysis. 47:145-151.
heat treatment effects on survival. 47:119-123.
Botrytis cinerea. 44:261-265; 46:1-4.
bunchstem necrosis. 46:579-580; 47:173-180.
crown gall. 44:22-26, 153-158, 241-248; 45:213-219; 46:499-508; 47:145-151; 48:26-32.
genetic analysis. 47:145-151.
heat treatment effects on survival of *A. vitis*. 47:119-123.
desséchement de la rafle. 46:579-580.
endophytic bacteria to control crown gall. 46:499-508.
Eutypa lata. 47:49-56.
fungal. relationship with resveratrol content of wines of different ages. 46:1-4.
grapevine dieback. 47:49-56.
grey mold. 45:338-340.
inflorescence necrosis. 46:579-580.
nitrogen source effects on. 47:173-180.
shading effects on. 47:173-180.
leafroll. detection by ELISA and symptomatology. 47:239-243.
relationship to varietal factors and climate. 47:193-198.
phylloxera. host utilization. 47:373-379.
susceptibility evaluation. 44:285-291.
powdery mildew. potassium silicate for control. 47:421-428.
Stiellähme. 46:579-580.
transmissible agent. 47:21-24.
Uncinula necator. control with potassium silicate. 47:421-428.
viroids. effects on Cabernet Sauvignon vines. 47:21-24.
virus. 44:148-152.

Distilled beverages. maturation 46:98-115.
cis- and *trans*-ß-methyl-γ-octalactone aroma threshold. 46:292-294.

Diurnal arginine synthesis. 46:37-42.

D-lactic acid assay by amperometric biosensors 47:11-16.

DMS. See dimethylsulfide.

DMSO. See Dimethylsulfoxide.

DNA. extraction. 45:102-106.
fingerprinting. *Agrobacterium* biovars. 47:145-151.
grapevine identification. 44:266-274; 45:102-106.
yeast strain identification. 45:86-91; 46:204-208; 48:339-344.
marker analysis. 47:145-151.

Dormancy, grapevine. hot water treated cuttings. 44:153-158.

Droplet counter-current chromatography (DCCC). See Chromatography.

Dry ashing. to determine copper and iron in must. 45:25-28.

Dry matter partitioning. of Chambourcin grapevines. 47:380-388.
of Seyval grapevines. 44:139-147; 46:469-477, 478-485.

Durif. DNA fingerprinting. 44:266-274.

E

Economic. forecasting. 45:63-69.
leafhopper impact on Concord. 48:291-302.

Electron microscopy. palynobiometric study of seedless grape cultivars. 48:207-213.

Electrophoresis. ethanol analysis in wine. 48:280-284.
patterns for varietal differentiation. 44:255-260.
simultaneous separation of organic and inorganic acids. 48:408-412.
soluble protein analysis. 46:235-242; 48:100-114.

Electrostatic interactions. polysaccharide and polyphenolic fractions. 47:25-30.

Elemental sulfur. effect on hydrogen sulfide production during fermentation. 44:211-216.
residues on grape berries. 44:205-210.

ELISA test for grapevine virus detection. 47:199-205, 239-243.

Ellagic acid. content of oak-aged Hungarian red wine. 46:67-74.
sediment. skin fermentation time effects on. 45:56-62.

Ellagitannin. content of oak wood. 46:262-268; 47:17-20, 103-107; 48:502-508, 509-515.

Endophytic bacteria. crown gall control. 46:499-508.

Energy production during malolactic fermentation. 46:319-323.

Environment. effects on grape composition and wine quality. 44:409-430.
effects on wine color attributes. 45:43-48.

Enzymatic reactor for initiating malolactic fermentation. 48:345-351.

Enzyme(s). hydrolysis. for sensory descriptive analysis. 44:359-370.
inhibitor. 48:1-6.
processing. effects on anthocyanins and phenolics. 48:39-48.

Equilibrium dialysis. to measure interactions between yeast walls and aroma substances. 45:29-33.

Erythroneura comes. feeding impact on yield and juice quality of Concord. 48:291-302.

Esters. composition of white wines from high acid must. 44:371-377.
nitrogen fertilization influence on concentrations in Riesling wine. 44:275-284.

Ethanethiol in California wines. 45:341-344.

Ethanol. analysis in wine. 48:280-284.
effects on biological aging of sherry. 48:71-79.
effects on sourness and bitterness in wine. 45:6-10.

Ethyl anthranilate. 46:392-398.

Ethyl carbamate. citrulline reaction with ethanol at low to normal temperatures. 44:309-312.
factors contributing to urea formation. 45:17-24.
formation in wine. 45:17-24, 235-242.
urea. reaction with ethanol at low to normal temperatures. 44:309-312.

Ethyl cinnamate. 46:392-398.

Ethyl 2,3-dihydrocinnamate. 46:392-398.

Ethyl maltol effects of juice quality. 44:320-326.

Ethylphenols. *Brettanomyces/Dekkera* spp. effect on content of red wine. 46:463-468.

Eutypa lata. 47:49-56.

Evaporation. from barrels during maturation of spirits. 46:98-115.

F

Factor analysis. for characterization and modelling of maturation of grapes. 48:317-322.

Fast protein liquid chromatography. soluble protein analysis. 46:235-242.

Fatty acids. in wine. 46:518-524.

Fermentation. alcoholic. acetic acid effects on. 46:278-280; 47:11-16.
free amino acid utilization. 47:313-322.
fructose uptake capacity of yeasts effects on. 46:175-180.
glucosidase activities of yeasts. 45:291-296.
kinetics. 44:127-133, 134-138; 47:363-368, 429-434.
lactic acid bacteria/yeast effects on. 47:1-10.
lees and insoluble materials effect on rate. 44:86-92.
simultaneous deacidification. 44:371-377.
vacuum filtration of must. 47:313-322.
yeast populations. 48:339-344.
calcium tartrate precipitation. 46:509-513.
colloid concentration influence on yeast macromolecule production. 46:486-492.
comparison of oak barrel and plastic tank. 45:11-16.
diacetyl formation and degradation. 46:442-448.
ethyl esters of amino acids formation. 44:41-48.
fining during. 45:417-422.
flavonoid and non-flavonoid compounds in must during and after. 46:255-261.
glycoconjugates. effects on. 48:397-402.
hydrogen sulfide production during. 44:211-216; 45:107-112.
kinetics. 47:363-368.
malolactic. See also Malolactic fermentation.
amperometric biosensors for assays of L-malic and D-lactic acids. 47:11-16.
by a genetically engineered strain of *S. cerevisiae*. 48:193-197.
diacetyl formation and degradation. 46:442-448.
energy production. 46:319-323.

enzyme reactor to initiate. 48:345-351.
freeze-dried *L. oenos* inoculation. 47:42-48.
natural. 47:435-440.
N-carbamyl amino acids identification. 44:49-55.
polysaccharide evolution. 47:108-110.
Port wine. 47:37-41.
rate. kinetics under anisothermal conditions. 44:127-133, 134-138.
resveratrol. extraction from grape skins during fermentation. 47:287-290.
glucoside concentrations. 48:214-219.
Saccharomyces cerevisiae. 46:175-180.
secondary. of low alcohol sparkling apple wine. 44:93-98.
seed addition effects on phenolic composition of wine. 46:363-367.
skin fermentation time effects on anthocyanins, phenols, ellagic acid sediment, and sensory characteristics. 45:56-62.
sluggish. acetic acid effects on. 46:278-280.
lactic acid bacteria/yeast effects on. 47:1-10.
starter cultures. 46:357-362.
stuck. 46:278-280.
sugar transport inhibition effect on production rate. 44:56-64; 46:175-180.
sulfate reduction to hydrogen sulfide. 45:107-112.
temperature. evolution influence on rate. 44:127-133.
influence on sensory characteristics of Pinot noir. 48:198-206.
thermal processing. sensory effects on Chardonnay and Semillon wines. 45:243-251.

Fertilization, nitrogen. effect on inorganic nitrogen status, fruit composition, and yield. 45:377-387.
effect on yeast growth in Riesling juice. 46:49-55.
influence on monoterpene, higher alcohol, and ester concentrations in Riesling wines. 44:275-284.
influence on must and wine composition. 45:34-42.
petiole nutrient concentration, effects on. 44:378-386.
vegetative growth. 44:378-386.
yield components, effects on. 44:378-386.

Ferulic acid. metabolism by wine lactic acid bacteria. 44:76-80.

Filtration. effects on sparkling wine foam behavior. 44:387-392; 45:407-409; 48:303-309.
vacuum. 47:313-322.

Fining. effects on color of juice and wine. 45:417-422; 46:155-158.
effects on resveratrol concentrations. 48:214-219.
interference with direct protein measurement. 48:303-309.
phenol-peptide interaction. 46:319-338.

Flame Seedless grapevines. cluster thinning. 46:429-436.

Flavanols. 45:349-352; 46:187-194; 295-298; 48:370-373.
virus presence effects on berry and leaf. 48:438-442.

Flavonoids. and non-flavonoid compounds in must. 46:255-261.
color correlation in Spanish red wine. 46:295-298.
cluster sun exposure effects on concentrations in Pinot noir grapes and wine. 46:187-194.
compounds in grape leaves. 47:186-192.

Flavor, wine. See also Wine, Sensory, Aroma, specific wine.
astringency. 46:128-133.
bitterness. 45:6-10; 46:128-133, 385-388.
canopy management practices influence. 46:542-558; 47:77-92.
diacetyl. 46:385-388.
differential profile. 48:187-192.
fermentation temperature effects on. 48:198-206.
from wood during aging. 46:98-115.
malolactic fermentation effects on. 48:187-192.
precursors. 44:359-370; 45:243-251.
sourness. 45.6-10; 46:128-133.
storage temperature effects on Chardonnay. 48:310-316.
sweetness. 46:128-133.
vineyard location influence. 46:542-558; 47:77-92.
viscosity. 46:128-133.

Flavorants of aging wines and spirits. 46:98-115.

Flooding stress. rootstock influence on response to. 44:313-319.

Flor yeasts. velum formation in sherry. 48:55-62, 160-168.

Flow injection analysis. total acidity in wines. 44:118-120.

Fluoride. yeast sensitivity to. 47:225-226.

Foam-active compounds in sparkling wines. 44:297-301, 387-392; 46:518-524.
wine filtration effect on behavior. 44:387-392; 45:407-409.

Folin-Ciocalteu reagent. evaluation of flavonoid phenols in white wine. 46:274-277.

Folpet degradation. 48:63-66, 67-70.

Fortified wines. Port vinification methods. 47:37-41.

Free α-amino nitrogen. concentration in grape juice. 47:389-402.
effect on yeast growth in Riesling juice. 46:49-55.

Freeze. injury. Chardonnay vines. 47:31-36
protection. Frostgard. 44:232-235.
weed control to control minimum temperatures. 44:431-434.
Riesling vines. 47:31-36

French-American hybrid vines. canopy management effects on berry composition and vine performance. 46:88-97.

French-American hybrid wines. comparisons with White Riesling using gas chromatography-olfactometry. 45:201-212.

French paradox. 46:449-462.

Frost protection. Frostgard. 44:232-235.
weed control influence on minimum temperatures. 44:431-434.

Fruit. See Berry, Grape.

Fruiting cuttings. polyamines in organs of. 48:80-84.

Fumigation. methyl bromide. 44:8-12.
methyl iodide. 44:8-12.
sulfur dioxide. residue persistence. 48:121-124.
vortex efficacy in suppressing crown gall. 44:241-248.

Fungal disease. See also Grapevine, Disease.
Eutypa lata. 47:49-56.
Uncinula necator. 47:421-428.

Fungicide(s). dicarboxymidic. residues in grapes, must, and wine. 45:338-340.
folpet. detection. 48:63-66, 67-70.
potassium silicate. 47:421-428.
powdery mildew treatment. 47:421-428.
residues on berries. 44:205-210.

Furaneol. determination for differentiation of white wines. 46:181-186.

Furans. extraction from oak. 47:163-172.

Fusel alcohol formation during fermentation. 44:17-21.

G

Gallic acid. influence of wood treatment, temperature, and maceration time. 47:441-446.

Galloylated procyanidins. 44:168-172.

Gamay wine. oxidation of *trans*-resveratrol. 48:33-38.
resveratrol extraction from grape skins during fermentation. 47:287-290.

Gas chromatography. See Chromatography.

Gas exchange in grapevines. 45:71-78, 173-180, 333-337, 423-428.

Gelatin fining. 46:155-158; 46:319-338.

Generalized Procrustes analysis. red port wines. 44:27-34.

Gene expression. in response to hypoxia. 44:445-451.
RNA extraction at five stages of berry development. 46:315-318.

Genetic(s). diversity among *Agrobacterium* strains. 47:145-151.
diversity in *Eutypa lata*. 47:49-56.
factors relating to grape composition and wine quality. 44:409-430.
molecular markers. 48:492-501.
RAPD markers. 48:492-501.

Geographical classification of wines. 44:302-308.

Gewürztraminer wine. protein instability. 45:319-326.

Gibberellic acid. effects on pollen germination and ovule and seed development. 47:152-156.
Girdling. effects on ^{14}C-assimilate partitioning. 44:1-7.
heat. effects on berry growth and deformability. 44:193-197.
Glomus species. 48:93-99.
Gluconolactone inhibition. 45:291-296.
Glucose. inhibition. 45:291-296.
type and level influence on malate metabolism of *Schiz. pombe* cells. 44:113-117.
transport inhibition as limiting factor of fermentation. 44:56-64.
Glucosidase(s). activities of yeast strains. 45:291-296.
Glucosides. storage temperature effects on. 48:310-316.
Glutamate dehydrogenase. 45:155-160.
Glutamine synthase/glutamate synthase. 45:155-160.
Glutathione. 44:8-12, 333-338.
Glycerol production. by cryotolerant *S. cerevisiae* strains during fermentation. 46:143-147.
in white winemaking products. 47:193-198.
Glycoconjugates. White Riesling. 48:397-402.
Glycoproteins in red wine. 45:410-416; 48:100-114.
Glycosidic precursors. 44:359-370.
Golden muscat wine. 44:198-204.
Gondola sampling for *Botrytis cinerea*. 44:261-265.
Grape(s). See also Berry and Grapevine.
acid invertase. 48:403-407.
anthocyanin analysis. 46:339-345.
-apple blends. 44:320-326.
aromatic composition. 48:181-186.
berry. arginine synthesis. 46:37-42.
calcium. 44:187-192.
color. 46:339-345.
composition. cluster thinning influence on. 46:429-436.
harvest date effects on. 46:10-16, 493-498.
leaf removal effects on. 45:123-132; 46:306-314; 47:63-76, 77-92.
nitrogen fertilization effects on. 45:377-387.
pruning method effects on. 47:291-296.
RNA isolation. 47:181-185.
rootstock effects on. 46:559-563.
Rupestris virus effects on. 48:449-458.
set. 47:152-156.
trellising effects on. 46:88-97; 47:63-76; 77-92.
vine spacing effects on. 46:88-97; 47:63-76, 77-92.
deformability. 44:187-192, 193-197.
development. 44:187-192, 193-197; 45:252-258.
elemental sulfur residues on. 44:205-210.
embryo sac. 47:152-156.
endosperm. 47:152-156.
fatty acids. 44:180-186.
glutathione increases at ripening. 44:333-338.
harvest date effects on composition and characteristics. 46:10-16, 493-498.
internal browning. 44:8-12.
lead distribution. 45:220-228.
malate dehydrogenase. 46:22-28, 29-36.
palynological classification of seedless grapes. 48:207-213.
pericarp. fatty acids composition. 44:180-186.
pigments. 46:339-345.
polysaccharide charge density. 47:25-30.
pomace ruse. 47:369-372.
potassium. 44:187-192.
pulp. lead distribution. 45:220-228.
protein synthesis. response to anaerobiosis. 45:267-272.
raisin. 45:141-149; 46:10-16, 493-498.
resveratrol concentration. 47:57-62, 93-99.
ripening. 45:252-258.
malate dehydrogenase role in. 46:29-36.
RNA extraction at different stages. 46:315-318.
sampling for *Botrytis cinerea*. 44:261-265.
seedless. palynological classification. 48:207-213.
seeds. amino acids in. 47:268-278.
fatty acids composition. 44:180-186.
lead distribution. 45:220-228.
nitrogenous components. 47:268-278.
peptides in. 47:268-278.
phenols. 47:268-278.
protein extraction from. 47:268-278.
skins. fatty acids composition. 44:180-186.
lead distribution. 45:220-228.
quercetin concentration. 46:187-194.
resveratrol concentrations. 47:93-99.
stomatal conductance. 46:227-234.
sucrose accumulation and sucrose-metabolizing enzymes. 48:403-407.
water stress effect on. 44:193-197.
xylem discontinuity. 44:187-192, 193-197.
yeast presence on berry surface. 47:435-440.
cluster sun exposure effects on quercetin. 46:187-194.
color. anthocyanin analysis. 46:339-342.
flavor/texture profiling. 47:301-308.
fungicide residues. 44:205-210.
juice. See Juice.
maturity. effect on alcoholic fermentation kinetics. 47:363-368.
pomace. potential food ingredient. 48:328-332.
resveratrol concentration. 47:57-62.
Rupestris stempitting virus effects on composition. 48:449-458.
sampling for bunch rot. immunoassay quantification. 45:300-304.
seedlessness. 47:152-156, 340-342.
seeds. development. gibberellic acid effects on. 47:152-156.
streptomycin effects on. 47:152-156, 340-342.
procyanidin. 45:259-262; 46:363-367.
resveratrol concentration. 47:57-62.
sensory evaluation. 47:301-308.
skin. resveratrol extraction from. 47:57-62, 287-290.
storage. methyl bromide fumigation. 44:8-12.
table. See Table grapes.
variety. effect on alcoholic fermentation kinetics. 47:363-368.
yeasts presence on berry surfaces. 47:435-440.
Grapevine(s). See also specific cultivar.
abscisic acid content. 48:115-120.
alpha zones. 44:409-430.
amidohydrolase. 48:137-144.
ammonium status. nitrogen source and shading effects on. 47:173-180.
anoxia. 44:313-319.
arginine synthesis in leaves and berries. 46:37-42.
beta zones. 44:409-430.
biannual cropping. 47:157-162.
bimodal cropping. 47:157-162.
biological control of crown gall. 45:213-219.
bloom time total nitrogen pool. 45:327-332.
botrytis bunch rot. 44:261-265; 48:482-491.
relationship with resveratrol concentrations in wines. 46:1-4; 47:93-99.
sulfur dioxide fumigation. 48:121-124.
budbreak. 44:153-158.
induction by water stress. 48:115-120.
bud. cold hardiness. 45:388-392; 47:100-102.
differentiation. 45:188-191.
initiation. 45:188-191.
survival. leaf removal effects on. 45:123-132.
bunchstem necrosis. 46:579-580; 47:173-180.
^{14}C-assimilates. distribution. partitioning. 44:1-7.
canopy management. 44:409-430.
basal leaf removal. 46:542-558; 47:63-76; 77-92.
configuration effects on Seyval blanc vines. 48:482-491.
dry matter accumulation. 47:251-256.
effect on gas exchange. 45:71-78, 173-180.
effect on raisins. 45:141-149.
effect on vine performance. 46:88-97; 47:63-76, 77-92.
effect on wine composition. 47:329-339.
effect on wine sensory qualities. 46:542-558; 47:77-92. 329-339.

effect on yield and fruit composition. 45:181-187, 188-191; 46:88-97; 46:306-314; 47:63-76, 77-92.
fruit zone leaf removal. 44:409-430.
hedging. 44:409-430.
leaf area estimation. 46:389-391.
light environment within. 46:209-218, 219-226, 306-314.
mechanization. 46:116-127; 47:291-296.
mid-winter pruning effects on bud cold hardiness. 45:388-392.
morphology. shoot number effects on. 47:244-250.
photosynthesis. 46:116-127, 227-234.
photosynthetic photon flux density (PPFD). 46:209-218, 219-226.
shading effects on Pinot noir vines. 47:173-180.
shoot. number effects on development and morphology. 47:244-250.
positioning. 44:409-430.
sun exposure effects on quercetin. 46:187-194.
sun flecks. 46:116-127, 209-218, 219-226.
thinning. 44:409-430.
yield. 44:173-179; 47:291-296; 48:482-491.
canopy microclimate. 45:123-132, 133-140; 46:116-127, 209-218, 219-226, 389-391; 47:63-76, 77-92.
capacity. 47:244-250.
carbohydrate. accumulation. 44:81-85, 159-167; 46:306-314; 47:244-250, 251-256; 48:115-120.
partitioning. 44:435-440.
seasonal changes in Chardonnay and Riesling. 47:31-36.
carboxylation efficiency. 45:297-304.
cell. cultures. RNA isolation. 47:181-185.
distruption. 48:145-149.
Chambourcin. morphology and dry matter partitioning. 47:380-388.
chlorophyll. and nitrogen content. 45:278-284.
relationship to soil lime content and VAM fungi. 48:93-99.
temperature effect on leaf. 46:375-379.
clonal selection. 46:437-441; 47:124-126.
clones. 45:393-400; 47:124-126.
closteroviruses. 47:199-205, 239-243.
cluster. exposure. influence on monoterpenes and wine olfactory evaluation of Golden Muscat. 44:198-204.
sun effects on quercetin. 46:187-194.
thinning. influence on fruit development. 46:429-436.
influence on wine composition. 47:329-339.
cold hardiness. 44:153-158, 159-167; 45:388-392; 46:243-249; 47:31-36, 63-76, 100-102; 48:131-136.
crop load. 44:409-430, 435-440; 45:252-258, 278-284; 46:429-436, 469-477, 478-485; 47:280-388, 329-339.
crown gall. 44:241-248; 47:119-123, 145-151; 48:131-136, 145-149.
cultivar identification by DNA fingerprinting. 44:266-274.
cuttings and *in vitro* propagation comparisons. 46:195-203.
defoliation. 45:173-180, 181-187, 188-191; 46:306-314.
dieback. 47:49-56.
dioecy. 48:323-327.
disease. See Disease and specific disease.
diurnal arginine synthesis. 46:37-42.
DNA extraction. 44:266-274.
dormant buds. 46:243-249.
dormant cuttings. heat tolerance of. 46:243-249; 48:131-136.
drought resistance. 45:297-304.
dry matter partitioning. 44:139-147; 46:469-477, 478-485; 47:251-256, 380-388.
dual culture with phylloxera and *Vitis* species. 48:157-159.
electrolyte leakage. 46:243-249; 48:145-149.
endogenous cryoprotectants. 47:31-36
endophytic bacteria. crown call response to. 46:499-508.
endosperm. 47:152-156.
factor analysis for characterization of maturation. 48:317-322.
fanleaf virus. 45:273-277.
fatty acids from lipid fractions of leaves and berry tissue. 44:180-186.
fertilization. See Fertilization.
field performance. virus infections effects on. 48:7-12.
field response to methanol. 47:297-300.
flavonoids. 47:186-192.
flooding stress. 44:313-319.
flower. cluster development. shoot number effects on. 47:244-250.
types. 48:323-327.
foliar injury. leafhopper feeding impact on Concord. 48:291-302.
French-American hybrids. 46:88-97.
frost protection. 44:232-235, 431-434.
fruit. composition. cluster thinning influence on. 46:429-436.
crop load effects on. 46:478-485.
environment effects on wine. 47:329-339.
leaf removal influence on. 45:133-140, 181-187, 188-191; 46:306-314; 47:63-76, 77-92.
maturation. leaf removal and vineyard location influence on. 46:542-558.
nitrogen fertilization effects on. 45:377-387.
fruiting cuttings. polyamines in organs of. 48:80-84.
fumigation for crown gall control. 44:241-248.
fungal disease. relationship with resveratrol content of wines of different ages. 46:1-4.
powdery mildew treatment with potassium silicate. 47:421-428.
gas exchange. defoliation, rootstock, training system, and leaf position influence on. 45:173-180.
effects of water logging on. 45:285-290.
-leaf age interaction. 45:71-78.
-water relations. 45:333-337, 423-428.
gene expression change in response to hypoxia. 44:445-451.
genetic relationships. 48:492-501.
germination. 47:152-156.
Gewürztraminer. canopy management impact. 47:77-92.
girdling. effects on ^{14}C-assimilate partitioning. 44:1-7.
peduncle. 44:193-197.
grey mold. 45:338-340.
growth. 47:251-256.
nitrogen effects on Pinot noir vines. 47:173-180.
regulators. 47:152-156.
viroids effects on. 47:21-24.
hand pollination. 48:207-213.
heat. girdling. 44:193-197.
shock. 46:243-249; 48:459-464, 465-470.
tolerance in dormancy. 44:153-158; 48:459-464, 465-470.
treatment of crown gall. 47:119-123.
hormones. 48:115-120.
hypoxia. 44:445-451.
inorganic nitrogen status. 45:377-387.
intercepted radiation. 46:389-391.
in vitro. dual culture with phylloxera and *Vitis* species. 48:157-159.
propagation. 46:195-203, 571-578.
juvenility. 46:571-578.
late harvest. effects on cold hardiness and soluble sugars. 47:31-36.
leaf. See also Leaf.
area. phosphorus availability, scion, and rootstock influence on. 47:217-224.
Seyval blanc canopy configuration. 48:482-491.
shoot number effects on. 47:244-250, 51-256.
arginine synthesis. 46:37-42.
biometrical data. ampelographic computer-aided digitizing system. 47:257-267.
canopy leaf area estimation. 46:389-391.
cell wall elasticity. 48:352-356.
flavonoid extraction. 47:186-192.
injury. leafhopper feeding impact. 48:291-302.
ontogeny. 48:352-356.
phenolic composition. 47:186-192.
removal influence on fruit maturation. 46:542-558.
specific dry weight. 46:227-234.
temperature effects on physiological responses. 46:375-379.
water potential. 46:227-234, 559-563; 48:352-356.
leafhopper feeding impact on Concord yield and juice quality. 48:291-302.
leafroll. 47:199-205, 239-243; 48:521-524.
and rugose wood. 48:438-442.

detection by ELISA and symptomatology. 47:239-243.
low temperature exotherm analysis. 45:388-392; 47:100-102.
light intensity. 46:306-314.
maturation. factor analysis for characterization and modelling. 48:317-322.
maturity indices. viroids effects on. 47:21-24.
mechanical pruning. effects on berry composition and yield. 47:291-296.
Okanagan Riesling vines. 44:173-179.
methanol toxicity. 47:297-300.
micropropagation. 46:571-578.
mineral nutrition. 44:159-167, 278-286, 409-430; 45:285-290; 47:217-224, 403-409; 48:80-84, 85-92, 93-99.
molecular markers. 48:492-501.
mortality. 44:435-440.
N-carbamoylputrescine. 48:137-144.
nitrogen. accumulation in Cabernet franc. 44:81-85.
fertilization. 44:159-167, 278-286; 47:173-180.
inorganic. 45:377-387.
reserves. 45:327-332; 47:173-180; 48:115-120.
seed components. 47:268-278.
nucleic acids in tissue. 47:181-185.
shading effects on. 47:173-180.
nutrient reserves. 48:115-120.
organic production. 46:306-314.
ovule development. 47:152-156.
partitioning. 45:327-332.
shoot number effects on. 47:251-256.
petiole. analysis. 44:378-386; 45:377-387.
nitrate. effect on yeast growth in juice. 46:49-55.
phosphorus concentration. phosphorus availability, scion, and rootstock influence on. 47:217-224.
phloem transport. 44:187-192, 193-197.
phosphorus availability. 47:217-224, 403-409.
photosynthesis. 44:139-147, 313-319; 45:71-78, 173-180, 297-304, 423-428; 46:227-234, 306-314, 375-379, 389-391, 469-477, 478-485; 47:244-250, 297-300, 297-300.
phylloxera. host utilization. 47:373-379.
in vitro dual culture with *Vitis* species. 48:157-159.
susceptibility evaluation. 44:285-291; 48:157-159.
Pinot noir. crop level effects on wine. 47:329-339.
fruit environment effects on wine. 47:329-339.
nitrogen source and shading effects on. 47:173-180.
pollen. morphology. 48:323-327.
tube growth inhibitors. from grape pistils. 46:17-21.
post-harvest water stress. bimodal cropping. 47:157-162.
potassium nutrition. 48:85-92.
powdery mildew. 44:409-430; 47:421-428.
Primativo clones. warm climate performance. 47:124-126.
propagation. 46:195-203; 48:131-136.
protein synthesis. 44:445-451; 45:267-272.
pruning. effects on carbohydrate and nitrogen accumulation. 44:81-85.
effects on crop yield and berry composition. 47:291-296; 48:482-491.
mechanical. on Okanagan Riesling. 44:173-179.
on Seyval blanc. 48:482-491.
on *Vitis rotundifolia*. 47:291-296.
weight. 44:378-386.
Pulliat. 48:323-327.
quercetin. concentration in berry skins. 46:187-194.
inhibitory effects against pollen tube growth. 46:17-21.
RAPD rootstock identification. 48:492-501.
response to nitrogen fertilization. 47:173-180.
RFLP analysis. of cultivars. 44:266-274.
Riesling. canopy management impact. 47:63-76.
carbohydrates and cold hardiness. 47:31-36.
RNA isolation. 47:181-185.
root. composition. partial defoliation effects on. 46:306-314.
development and distribution. 45:345-348; 46:306-314.
morphology. phosphorus influence on. 47:403-409.
rootstock. 44:409-430; 45:345-348; 48:26-32.
crown gall resistant. 48:145-149.
effects on berry composition. 45:181-187, 188-191; 46:559-563.
effects on gas exchange. 45:71-78, 173-180.
effects on leaf water potential. 46:559-563.
effects on photosynthesis. 45:297-304.
effects on yield. 45:181-187, 188-191; 46:559-563.
identification. 46:299-305; 48:492-501.
influence on response to flooding stress. 44:313-319.
influence on shoot growth, leaf area, and petiole P. 47:217-224.
phylloxera. host utilization. 47:373-379.
susceptibility evaluation. 44:285-91.
trunk volume. influence on yield and fruit composition. 45:181-187.
-virus interactions. 44:148-152.
Ruby Seedless. 46:559-563.
Rupestris virus effects on. 48:449-458.
scion. influence on shoot growth, leaf area, and petiole P. 47:217-224.
seedlessness. 47:340-342.
selection, clonal. Cabernet Sauvignon. 46:437-441.
senescence. 45:71-78.
shading. See Canopy management.
shoot(s). ^{14}C-assimilate distribution. 44:1-7.
density. leaf removal effects on. 45:123-132.
effects on wine composition. 47:329-339.
growth. phosphorus availability, scion, and rootstock influence on. 47:217-224.
shoot number effects on. 47:244-250.
water logging effects on. 45:71-78
positioning. 44:409-430; 47:380-388.
site influence on wine. 46:542-558.
soluble solids. methanol effects on. 47:297-300.
soluble sugars. 47:31-36.
source-sink relationships. 45:173-180; 46:306-314, 469-477, 478-485; 47:244-250, 251-256.
starch synthesis. 46:306-314.
stomatal conductance. 45:297-304; 46:375-379.
stomatal resistance. methanol effects on. 47:297-300.
stress physiology. 48:115-120.
sugar levels in defoliated vines. 46:306-314.
sun exposure. effects on aromatic composition. 48:181-186.
effects on quercetin. 46:187-194.
tetraploid. pollen tube growth inhibitors. 46:17-21.
thermotolerance. 46:243-249; 48:131-136, 459-464, 465-470.
tissue. nucleic acids content. 47:181-185.
transpiration. 45:173-180; 46:227-234; 47:297-300.
trellising. 45:173-180; 46:88-97; 47:63-76, 77-92, 329-339.
tumor suppression. 44:241-248, 249-254.
variety. identification by DNA fingerprinting. 44:266-274; 48:492-501.
relationship to organic acids, sugars, and glycerol content of white wine. 47:193-198.
vegetative growth. 44:378-386, 409-430.
vigor. leaf removal effects on. 45:123-132.
vine spacing. 44:409-430; 46:88-97; 47:63-76, 77-92.
viroid(s). effects on Cabernet Sauvignon. 47:21-24.
virus. Albana response to. 48:7-12.
Cabernet franc responses to. 44:81-85; 47:239-243.
detection. by ELISA and symptomatology. 47:239-243.
graft transmission. 48:7-12.
inoculation effects on carbohydrate and nitrogen accumulation. 44:81-85.
leafroll. leafroll. and rugose wood. 48:438-442.
detection by ELISA and symptomatology. 47:239-243.
-rootstock interactions. 44:148-152.
Rupestris stem pitting. 48:449-458.
Trebbiano Romagnolo. 48:7-12.
Vitis. See *Vitis*.
water. logging. 45:285-290.
stress. budbreak induction by. 48:115-120.
effect on Concord growth and physiology. 45:252-258.
to produce second crop. 47:157-162.
use efficiency. 45:297-304, 423-428; 46:227-234.
loss. 46:243-249.
wild. 48:323-327.

winter injury. 44:159-167; 47:63-76, 100-102.
yield. See also Yield.
bimodal cropping. 47:157-162.
crop load influence on. 46:469-477, 478-485.
components. 44:378-386.
leaf removal influence on. 45:123-132, 133-140, 181-187, 188-191.
methanol effects on. 47:297-300.
Rupestris virus effects on. 48:449-458.
variation. 48:323-327.
viroids effects on. 47:21-24.
vs. fruit quality. 47:63-76.
xylem. fluid chemistry. 45:327-332.
discontinuity. 44:187-192, 193-197.
Zinfandel clones. warm climate performance. 47:124-126.

Grenache wines. free amino acid utilization. during fermentation and bottle aging. 47:313-322.
procyanidin composition. 44:168-172.

Grey mold. 45:338-340.

Growth chamber. temperature effects on leaf response. 46:375-379.
grapevine. See Grapevine.

Guide to authors. 48:527-532.

Gustation. physiology of sensory response to wine. 48:271-279.

Gypsum. acidification of sherry must. 44:400-404.

H

Hanseniaspora uvarum. population during fermentation in a new winery. 48:339-344.

Harvest date. relationship to quality of grapes and raisins. 46:10-16, 493-498.

Haze, wine. phenol-peptide interaction. 46:319-338.

Headspace technique. to measure interactions between yeast walls and aroma substances. 45:29-33.

Health. dietary fiber from grape pomace. 48:328-332.
ethanol metabolism. 46:449-462.
French paradox. 46:449-462.
grape pomace as a potential food ingredient. 48:328-332.
resveratrol. 46:159-165, 346-352.
Syndrome X. 46:449-462.

Heartwood, oak. ellagitannin content. 46:262-268.
lactones. 46:419-423, 424-428.

Heat. girdling. 44:193-197.
formation during malolactic fermentation. 48:423-427.
shock of Cabernet Sauvignon vines. 46:243-249; 48:459-464, 465-470.
stability. of Gewürztraminer. 45:319-326.
of red wines. 45:410-416.
stress of dormant *Vitis vinifera* cuttings. 44:153-158; 46:243-249.
therapy. leafroll and rugose wood. 48:438-442.
tolerance of dormant *Vitis vinifera* cuttings. 46:243-249; 48:459-464, 465-470.
treatment of *Agrobacterium vitis*. effects on survival. 47:119-123.

Hedging. 44:409-430; 48:482-491.

Hemicellulase. 45:113-116.

Herbicides. control of vineyard minimum temperatures. 44:431-434.

Hexokinase activity. 46:175-180.

High performance liquid chromatography. See Chromatography.

Higher alcohols. formation during fermentation. 44:17-21.
in white wines from high acid must. 44:371-377.
nitrogen fertilization influence on concentrations in Riesling wine. 44:275-284.
production by cryotolerant *Saccharomyces* strains. 47:343-345.

Hot water treatment for crown gall. 44:153-158.

HPLC. See Chromatography.

Hulls, yeast. See Yeast hulls.

Human nutrition. grape seed addition during fermentation effect on phenolics. 46:363-367.

Hydraulic conductivity. shoot orientation effects on. 46:324-328.

Hydrogen sulfide production during fermentation. 44:17-21, 211-216; 46:269-273.
nitrogen deficiency effect on. 45:107-112; ellagitannin content. 46:262-268.
potential of *Saccharomyces cerevisiae* wine yeasts. ellagitannin content. 46:262-268.

Hydrophobic proteins contribution to foam in Champagne base wine. 44:297-301.

Hydroxycinnamoyl-tartaric acid esters in grape skins. 44:13-16.

Hydroxystilbenes. 46:1-4.

Hyperoxidation. effect on procyanidin composition of Grenache blanc wines. 44:168-172.
treatment in white wine production. 48:150-156.

Hypoxia. changes in gene expression in response to. 44:445-451.

I

Ice nucleation. evaluation of Frostgard. 44:232-235.

Identification. of anthocyanins in Reliance grapes. 46:339-345.
of grapevine rootstocks with isozymes. 46:299-305.
of 1,2,3,4-Tetrahydro-ß-carboline-3-carboxylic acids in wine samples. 45:92-101.
of yeast strains. 45:86-91.

Immobilized yeast. in double-layer gel beads or strands. 48:471-481.

Immunoassay for *Botrytis cinerea* in harvested wine grapes. 44:261-265; 45:300-304.

Index, Volumes 44, 45, 46, 47, 48 (1993-1997). 48:5XX-XXX.

Indexing. leafroll associated virus. 47:239-243.

Inflorescence necrosis. 45:155-160.
nitrogen source effects on. 47:173-180.
shading effects on. 47:173-180.

Inoculation. of yeast and bacterial starter cultures. 45:464-469.

Inorganic aicd(s). separation by capillary zone electrophoresis in wines and juices. 48:408-412.

Inorganic anions in rectified concentrated musts. 44:292-296.

In vitro. dual culture with phylloxera and *Vitis* species. 48:157-159.
propagation of *Vitis vinifera* vines. 46:195-203, 571-578.
protein synthesis. 44:445-451.

In vivo protein synthesis. 44:445-451.

Ion chromatography. See Chromatography.

Iron. determination in must by wet and dry ashing. 45:25-28.
influence on wine oxidation. 46:380-374.

Irrigation. management for biannual cropping. 47:157-162.

ISEM. See Immunosorbent electron microscopy.

Isoelectric focusing. varietal must and wine differentiation. 44:255-260.

Isozyme(s). profiles of Norton and Cynthiana cultivars. 44:441-444.
rootstock identification. 46:299-305.

J

Juice, grape. amino acid profiles in. 47:389-402.
browning. 44:320-326.
carbonation effects on quality. 44:320-326.
color. extraction. 45:113-116, 417-422.
polyphenoloxidase effects on. 48:13-25.
processing effects on. 47:279-286.
ethyl maltol effects on quality. 44:320-326.
fermentation kinetics. 47:429-434.
fining treatments. 45:417-422.
glucosidase activities during fermentation. 45:291-296.
hyperoxidation. 48:150-156.
organic and inorganic acids. simultaneous separation. 48:408-412.
processing effects on phenolics and color. 47:279-286.
proteins. 48:100-114.
resveratrol analysis by HPLC. 46:346-352; 47:93-99.
concentration in Muscadine. 47:57-62.
simultaneous separation of organic and inorganic acids. 48:408-

412.
thermal processing. sensory effects on Chardonnay and Semillon wines. 45:243-251.
yield increase with macerating enzymes. 45:113-116.

Juvenile characteristics of *Vitis vinifera* vines. 46:195-203, 571-578.

K

Karyotypes of wine yeasts. 46:175-180.

Kieselsol fining of Seyval blanc juice and wine. 45:417-422.

Kinetic(s). characteristics of peroxidase B_5. 48:33-38.
of alcoholic fermentation. effects of variety, year, and grape maturity on. 47:363-368.
prediction of. 44:134-138.
under anisothermal conditions. 44:127-133, 134-138.
of calcium tartrate crystallization. 44:65-75.

Koshu wine. nitrogen content changes with *sur lie* methods. 45:312-318.
sur lie method. 48:1-6.

Kyoho grapevines. 47:157-162; 48:115-120.

L

Labor, vineyard. Training system effects on. 47:63-76.

L-lactate. sequential injection determination in wine. 48:428-432.

Lactic acid. determination in wine. 47:11-16.
diffusion. malolactic fermentation energy. 46:319-323.
enzyme reactor for conversion. 48:345-351.

Lactic acid bacteria. antagonistic activity against wine yeast. 47:1-10.
degradation of arginine producing citrulline and ethyl carbamate precursors. 45:235-242.
effect on ethylphenol content of red wine. 46:463-468.
freeze-dried cell reactivation. 46:357-362.
growth and metabolism in synthetic wine. 46:166-174.
lysozyme to reduce flora in must and wine. 48:49-54.
metabolism in synthetic wine. 46:166-174.
phenol carboxylic acids metabolism. 44:76-80.
pre-culture conditions. 46:357-362.
production of 2,3-butanediol isomers during fermentation by. 46:134-137.
volatile phenol formation. 48:443-448.

Lactobacillus. 2,3-butanediol isomers formed during fermentation by. 46:134-137.
relationship to sluggish fermentation. 47:1-10.

Lactobacillus plantarum. 44:76-80; 46:166-174; 48:423-427.
modelling of malolactic activity. 46:368-374.
utilization of malate. 48:423-427.

Lactone, oak. 48:502-508, 509-515.

Latent virus/rootstock interactions. 44:148-152.

Lead. distribution in grape berries. 45:220-228.
in wine. 44:459-463, 464-467.
potentiometric stripping determination. 45:305-311.

Leaf, grapevine. age. interactions with fruiting and exogenous cytokinins. 45:278-284.
area. canopy configuration effects on. 48:482-491.
gas exchange interaction. 45:71-78.
measurement. 46:389-391.
phosphorus availability influence on. 47:217-224.
arginine synthesis. 46:37-42.
biometric data. 47:257-267.
^{14}C-assimilates. 44:1-7; 46:37-42.
cell wall elasticity. 48:352-356.
fatty acid from lipid fractions. 44:180-186.
flavonols extraction. 47:186-192.
gas exchange. 45:71-78, 285-290, 423-428; 46:227-234.
ontogeny. 48:352-356.
phenolic composition of. 47:186-192.
photosynthesis. 46:469-477.
position. effect on gas exchange in Pinot noir. 45:173-180.
removal. effects on fruit composition, rot, and yield. 44:409-430; 45:133-140; 46:542-558.
effects on canopy structure, microclimate, bud survival, shoot density, and vine vigor. 45:123-132.
effects on wine sensory qualities. 44:409-430; 46:542-558.
for control of Botrytis bunch rot. 45:133-140.
RNA extraction. 47:181-185.
rootstock influence on. 47:217-224.
scion influence on. 47:217-224.
senescence. 45:278-284.
shading effects on leaf water potential. 45:423-428; 46:227-234.
symplastic water content. 48:352-356.
temperature effects on physiological responses. 46:375-379.
water potential. 46:559-563; 48:352-356.

Leafhopper. feeding impact on Concord yield and juice quality. 48:291-302.

Leafroll virus. 47:199-205; 48:521-524.

Leuconostoc oenos. antagonism by lactic acid bacteria. 47:1-10.
bacteriophages. 44:99-112.
2,3-butanediol isomers formed during fermentation by. 46:134-137.
characterization. 44:99-112.
chromosome characterization. 46:43-48.
classification. 44:99-112.
colloid concentration influence on macromolecule production. 46:486-492.
decarboxylation activity. 44:76-80.
diacetyl, influence on. 46:385-388, 442-448.
freeze-dried cells. 46:357-362; 47:42-48.
growth and metabolism in synthetic wine. 46:166-174.
habitat. 44:99-112.
interactions with *Pediococcus* spp. during red wine vinification. 45:49-55.
metabolism. 44:99-112.
malolactic activity. 46:368-374; 48:423-427.
morphology. 44:99-112.
plasmids. 44:99-112; 46:43-48.
polysaccharides. 44:99-112.
pre-culture conditions influence on malolactic fermentation. 46:357-362.
reactivation process. 46:357-362.
relationship to sluggish fermentation. 47:1-10.

Light intensity, vine. effect on root growth, grape composition, and wine quality. 46:306-314.

Lime. soil content. 48:93-99.

Limousin oak. 45:429-434.
See also Oak.

Lipid(s). fractions of grape leaves and tissues. 44:180-186.

Living mulches for frost control. 44:431-434.

Localization of procyanidins in grape seeds. 45:259-262.

Low alcohol sparkling apple wine. 44:93-98.

Low temperature exotherm analysis. midwinter pruning effects on. low temperature exotherm analysis. 45:388-392.

LTE. See Low temperature exotherm.

LTI. See Latitude temperature index.

Lysozyme. to inhibit malolactic fermentation and stabilize wine. 48:49-54.

M

Macabeo wines. 46:5-9, 529-541.

Maceration. enzymes. use in juice processing. 45:113-116.
time. effect on phenolic derivatives of wine spirit mixtures. 47:441-446.

Malate. analysis. 44:292-296.
degradation. 44:113-117.
dehydrogenase. intracellular compartmentation of the isoforms. 46:22-28.
mitochondrial and cytosolic isoforms. 46:29-36.
transport. 48:193-197.

Malic acid. assay by amperometric biosensors. 47:11-16.
decomposition. 44:371-377.
enzyme reactor for conversion. 48:345-351.
transport. 46:319-323.

Malic enzyme. 46:315-318; 48:345-351.

Malolactic fermentation. 44:76-80; 46:166-174, 357-362; 48:345-351.
assay by amperometric biosensors for L-malic and D-lactic acids. 47:11-16.
ATP generation. 46:319-323.
Burgundy wines. 48:187-192.
2,3-butanediol isomers formation. 46:134-137.
by a genetically engineered strain of *S. cerevisiae*. 48:193-197.
calcium tartrate precipitation. 46:509-513.
colloid concentration influence on yeast macromolecule production. 46:486-492.
enzyme reactor to initiate. 48:345-351.
heat formation during. 48:423-427.
influence on diacetyl concentration. 46:385-388; 442-448.
inhibition by lysozyme. 48:49-54.
Leuconostoc oenos. freeze-dried *L. oenos* culture inoculation. 47:42-48.
modelling of malolactic activity of *Lactobacillus plantarum* and *Leuconostoc oenos*. 46:368-374.
protonmotive force. 46:319-323.
resveratrol glucoside concentrations, influence on. 48:214-219.
sensory properties of Burgundy wines. 48:187-192.
starter culture reactivation. 46:357-362.

Manganese influence on wine oxidation. 46:380-374.

Mannoproteins. charge properties. 47:25-30.
evolution during fermentation. 47:108-110.

Maturation. grape. modelling and characterization. 48:317-322.
of wines and spirits. 46:98-115.

Mechanical harvesting. 46:116-127.

Mechanical pruning. 46:116-127; 47:291-296; 48:482-491.
of Okanagan Riesling vines. 44:173-179.
of Seyval blanc vines. 48:482-491.

Merlot grapevines. methanol toxicity. 47:297-300.

Merlot wines. interactions between *L. oenos* and *Pediococcus* spp. during vinification. 45:49-55.
resveratrol glucosides. 47:415-420.

Metabolism, ethanol. 46:449-462.

Methanethiol in California wines. 45:341-344.

Methanol. toxicity to vines. 47:297-300.

Methionine metabolism relationship to *n*-propanol production. 44:17-21.

Methyl anthranilate. 46:392-398.

Methyl bromide fumigation of Thompson Seedless. 44:8-12.

ß-Methyl-γ-octalactone. aroma threshold. 46:292-294.
contents in French and American oaks. 46:424-428.
quantification. 46:419-423.

Methyl iodide fumigation of Thompson Seedless. 44:8-12.

Microbial calorimetry. yeast growth inhibition by alcohols and organic acids. 48:413-422.

Microcalorimetry. heat formation during malolactic fermentation. 48:423-427.

Microclimate, grapevine. See also Canopy management.
Botrytis cinerea control. 44:409-430.
evaporative potential in the fruit zone. 44:409-430.
training system impact on. 47:63-76.

Micropropagation, grapevine. 46:571-578.

Mineral. composition. water logging effects on Sultana vines. 45:285-290.
nutrition of grapevines. 44:409-430; 47:217-224, 403-409.
deficiency symptoms. 48:85-92.
phosphorus. 47:217-224.
potassium. 48:85-92.

Model wines. to investigate interactions between yeast cell walls and volatile compounds. 45:29-33.

Modelling of malolactic activity. 46:368-374.

Molecular markers. 47:49-56; 48:492-501.

Molecular taxonomy of yeasts. 46:204-208.

Monoterpenes. Chardonnay juice. 44:359-370.
Gewürztraminer wine. 47:77-92.
Muscat grapes. 48:181-186.
Muscat wine. 44:198-204; 45:291-296.
nitrogen fertilization influence on concentrations in Riesling wine. 44:275-284.
Riesling. canopy management effects on. 47:63-76.

Muscadine grapevines. resveratrol concentration in berries, pomace, and seeds. 47:57-62.
yield and berry composition affected by hand and mechanical pruning. 47:291-296.

Multivariate statistical analysis. 48:177-180.

Muscadine wines. anthocyanin polymer structures. 47:323-328.
fining agents effects on. 46:155-158.
resveratrol concentration. 47:57-62.

Muscat blanc vines. methanol toxicity. 47:297-300.

Muscat grapes. aromatic composition. 48:181-186.

Muscat wine. terpineol content. 45:291-296.

Must, grape. acidification of sherry. 44:400-404.
amino acid determination. 48:229-235.
characterization. 45:79-85.
clarification. effects on free amino acid utilization during fermentation and bottle aging. 47:313-322.
effects on yeast during fermentation. 44:452-458.
copper determination by wet and dry ashing. 45:25-28.
fatty acids composition. 44:180-186.
flavonoid and non-flavonoid compounds. 46:255-261.
glycerol content. relationship to varietal factors and climate. 47:193-198.
hyperoxidation 48:150-156.
iron determination by wet and dry ashing. 45:25-28.
natural fermentation. 47:435-440.
nitrogen fertilization effects on composition. 45:34-42.
organic acids. relationship to climate and varietal factors. 47:193-198.
oxidation. 44:393-399.
polysaccharide content. 46:564-570.
post-fermentation standing. changes in free anthocyanins and polymeric pigments. 45:161-166.
proteins. fermenting must. 48:100-114.
fractionation and characterization. 46:250-254.
rectified. anion content. 44:292-296.
resveratrol. concentration in Muscadines. 47:57-62.
extraction from Gamay skins. 47:287-290.
sherry. acidification. 44:400-404.
sterol content. 44:452-458.
sugar content. relationship to varietal factors and climate. 47:193-198.
varietal differentiation. 44:255-260.

N

N-carbamyl amino acids identification in wines and yeast cells. 44:49-55.

N-carbamoylputrescine. 48:137-144.

Necrosis. See also Inflorescence necrosis, Grapevine, Disease.
nitrogen source effects on. 47:173-180.
shading effects on. 47:173-180.

Neural networks. verification of wine origin. 47:410-414.

Nitrogen. accumulation in Cabernet franc vines. 44:81-85.
compounds. in seeds. 47:268-278.
utilization during fermentation and bottle aging. 47:313-322.
concentration in vines. 47:389-402; 48:115-120.
content of wines. 45:312-318; 47:127-133.
depletion. effect on hydrogen sulfide production by wine yeasts. 45:107-112; 46:269-273.
fertilization. influence on monoterpene, higher alcohol, and ester concentrations in Riesling wine. 44:275-284.
influence on must and wine composition. 45:34-42.
soil-applied. 44:409-430.
White Riesling vines. 44:159-167, 378-386; 45:34-42.
reserves. ^{15}N applications contribution to. 45:327-332.
source. effects on Pinot noir vines. 47:173-180.

in secondary fermentation of low alcohol wine. 44:93-98.
sparkling wine foam characteristics. 46:518-524.

Noble wines. anthocyanin polymer structures. 47:323-328.
processing effects on phenolics and color. 47:279-286.

Non-flavonoid compounds and flavonoid compounds in standing must. 46:255-261.

Norisoprenoids in Chardonnay juice. 44:359-370.

n-propanol. production during fermentation. 44:17-21; 45:107-112.

Nucleic acids in grapevine tissue. 47:181-185.

Nutrient. demand. N, P, and K fertilization. 44:409-430.
reserves in Kyoho vines. 48:115-120.

Nutrition, grapevine. 44:409-430.
See also Mineral nutrition, Grapevine.

Nutrition, human. ethanol role on. 46:449-462.
French paradox. 46:449-462.

O

Oak. barrel aging. See Barrel aging.
barrel-to-barrel variation in oak extractives. 47:17-20.
cask properties. 48:502-508, 509-515.
cis- and *trans*-ß-methyl-γ-octalactone. aroma threshold. 46:292-294.
contents in French and American oaks. 46:424-428.
quantification. 46:419-423.
content of phenolic acid and aldehyde in flavor components. 47:441-446.
ellagitannin content. 46:262-268; 47:17-20, 103-107.
ethanol concentration effects on solids extraction. 46:98-115.
extraction of volatile compounds. 47:163-172.
heating effects on wine sensory characteristics. 47:441-446.
lactone. 46:419-423, 424-428; 47:163-172.
lignin. 46:98-115; 47:441-446.
model cask. 48:502-508, 509-515.
Pedunculate oak. anatomy related to cask properties. 48:502-508.
ellagitannin content. 46:262-268; 48:502-508, 509-515.
ß-methyl-γ-octalactone stereoisomers. 46:424-428; 48:502-508, 509-515.
phenolic compound concentration. 46:98-115; 47:163-172, 441-446.
changes during aging of red wines. 46:67-74.
relationship between geographical origin and chemical composition of oak wood. 45:192-200.
seasoning effects on wine sensory characteristics. 47:441-446.
Sessile oak. anatomy related to cask properties. 48:502-508.
ellagitannin content. 46:262-268; 48:502-508, 509-515.
ß-methyl-γ-octalactone stereoisomers. 46:424-428; 48:502-508, 509-515.
spirit aging. 46:98-115.
storage temperature effects on aroma. 48:310-316.
taste thresholds of phenolic extracts of French and American oak. 45:429-434.
toasting effects on wine spirit mixtures. 47:441-446.
volatile extractives. 47:17-20, 163-172.
wood anatomy. 48:502-508.
white. ß-methyl-γ-octalactone stereoisomers. 46:424-428.

Odor-active compounds. *bis*(2-hydroxyethyl) disulfide. 46:84-87.
in Pinot noir wines. 46:392-398.

Odor analysis. using gas chromatography-olfactometry. 45:201-212; 46:392-398.
physiology of human sensory response to wine. 48:271-279.

Okanagan Riesling vines. yield component path analysis. 44:173-179.

Olfactometry. characteristics of aged Vidal blanc wines. 46:56-62.
identification of four odorants in Burgundy Pinot noir. 46:392-398.
physiology of human sensory response to wine. 48:271-279.

Organic acids. analysis. determination in grape juice and wine. 47:193-198; .48:408-412.
influence on calcium tartrate precipitation in wine. 46:509-513.
relationship to climate and varietal factors in winemaking products. 47:193-198.
separation by capillary zone electrophoresis in wines and juices. 48:408-412.
yeast growth inhibition by. 48:413-422.

Organic viticulture. 47:421-428.

Oxalates. in cork stoppers. 46:63-66.

Oxidation. ascorbic acid effects on post-disgorgement oxidative stability of sparkling wine. 44:227-231.
copper influence on. 46:380-374.
iron influence on. 46:380-374.
manganese influence on. 46:380-374.
must. 44:393-399.
wine. 46:274-277; 48:225-228.
Champagne pressing. 44:393-399.

Oxygen. consumption during Champagne pressing. 44:393-399.
effects on fermentation kinetics. 47:429-434.

P Q

Palomino fino grapes. characterization. 48:317-322.

Palynological classification of seedless grapes. 48:207-213.

Parellada wines. 46:5-9, 529-541, 564-570.

p-coumaric acid. metabolism by wine lactic acid bacteria. 44:76-80.

Pectinase. use in juice processing. 45:113-116.

Pediococcus. growth and metabolism in synthetic wine. 46:166-174.
interactions with *L. oenos* and during red wine vinification. 45:49-55.

Pedunculate oak. ellagitannin content. 46:262-268.
ß-methyl-γ-octalactone stereoisomers. 46:424-428.

Peptides. extraction from seeds. 47:268-278.
from seeds into wine. 47:268-278.
in wine. 45:167-172; 46:319-338.

Pericarp. fatty acids composition. 44:180-186.

Pest(s). leafhoppers. 48:291-302.

Peroxidase isoenzyme B_5. 48:33-38.

Petiole. nutrient concentration. 44:378-386; 45:377-387.
nitrate effect on yeast growth in juice. 46:49-55.

Petite Sirah. DNA fingerprinting. 44:266-274.

pH. effect on sourness and bitterness of wine. 45:6-10.

Phenol(s). See also Polyphenols.
-carboxylic acids metabolism by wine lactic acid bacteria. 44:76-80.
extraction from oak. 47:163-172.
fining effects on in muscadine wines. 46:155-158.
skin fermentation time effects on. 45:56-62.
volatile.. 48:443-448.

Phenolic(s). acids and aldehydes. in white oak. 47:441-446.
in white wine. 44:168-172.
anaerobic metabolism effects on in berry skins. 44:13-16.
composition of grape leaves. 47:186-192.
direct HPLC separation. 45:1-5.
grape seed supplementation during fermentation effects on concentration. 46:363-367.
-peptides precipitation. 46:319-338.
processing effects on. 47:279-286; 48:39-48.
processing enzymes effects on. 48:39-48.
reduction by fining treatments. 45:417-422.

Phenylalanine ammonia-lyase. 47:181-185.

Phloem transport. 44:193-197.

Phosphorus. availability influence on grapevines. 47:217-224, 403-409.

Photosynthesis. Cabernet Sauvignon vines. 46:306-314.
rootstock and plant age effects on. 45:297-304.
crop load effects on. 46:469-477, 478-485.
methanol effects on. 47:297-300.
Pinot noir grapevines. influence on gas exchange. 45:173-180.
Sangiovese grapevines. 45:71-78; 46:227-234.
Seyval grapevines. 44:139-147; 46:469-477, 478-485.
shoot orientation effects on. 46:324-328.
temperature effects on leaf responses. 46:375-379.
training system effects on. 46:116-127, 306-314.
virus presence effects. 48:438-442.

whole vine. 46:469-477.

Photosynthetic photon flux density (PPFD). 46:209-218, 219-226.

Phthalimide. degradation from folpet in aqueous solutions and yeast suspensions. 48:63-66.
detection in grape must and wine. 48:67-70.

Phyllotaxis. 44:1-7.

Phylloxera. rootstock susceptibility evaluation. 44:285-291.
surface sterilization of eggs. 48:157-159.

Phytoalexins. in muscadine grapes and wines 47:57-62.
in wines. 46:1-4, 159-165, 346-352.

pI. of glycoproteins. 48:100-114.

Pigments. anthocyanin identification in Reliance grapes. 46:339-345.

Pinot noir grapevines. cluster sun exposure effects on quercetin. 46:187-194.
gas exchange. 45:173-180.
inflorescence necrosis. 45:155-160.
yield and fruit composition. 45:181-187, 188-191.

Pinot noir wines. crop load effects on composition and sensory characteristics. 47:329-339.
fruit environment effects on composition and sensory characteristics. 47:329-339.
odor-active compounds. 46:392-398.
processing enzymes effects on anthocyanins and phenolics. 48:39-48.
quercetin concentration. 46:187-194.
resveratrol glucosides. 47:415-420; 48:214-219.
trans-resveratrol concentration in: 46:159-165.

Plasmid and chromosome characterization of *Leuconostoc oenos* strains. 46:43-48.

Pollen. classification by grain dimensions. 48:323-327.
morphology. 48:323-327.
tube growth inhibitors. 46:17-21; 47:152-156; 48:323-327.

Polyamines. in fruiting cuttings. 48:80-84.

Polydatin. presence in commercial wines. 46:159-165; 47:415-420; 48:169-176.

Polymerase chain reaction. identification of *Agrobacterium tumefaciens* biovars. 47:145-151.
identification of yeast strains. 45:86-91; 46:204-208.

Polymeric pigments. changes during fermentation and post-fermentation standing of musts. 45:161-166.

Polymerization. 45:349-352.

Polyols in wine. 45:229-234.

Polyphenol(s). See also Phenols, Polymeric phenols.
charge densities. 47:25-30.
components in red wines. microbial synthesis of volatile phenols. 48:443-448.

Polyphenoloxidase. effects on juice color. 48:13-25.

Polysaccharides. charge properties. 47:25-30.
evolution during fermentation and post-maceration. 47:108-110.
levels in winemaking products. 46:564-570.

Polyvinylpolypyrrolidone. fining agent. 45:417-422.

Pomace. antioxidant activity. 47:369-372.
contact. effect on procyanidin composition of wine. 44:168-172.
nutritional and physiological properties. 48:328-332.
resveratrol concentration in Muscadine. 47:57-62.
reuse. 47:369-372.

Port wine. color evaluation. 44:27-34; 47:37-41.
vinification methods. 47:37-41.

Post-fermentation standing musts. changes in free anthocyanins and polymeric pigments. 45:161-166.
flavonoid and non-flavonoid compounds. 46:255-261.

Potassium. bitartrate. seeding of sherry. 46:525-528.
silicate. powdery mildew treatment 47:421-428.

Powdery mildew. 44:409-430; 47:421-428.

Precipitation, spontaneous. calcium tartrate. 46:509-513.

Pressing. Champagne. 44:393-399.

Primitivo. DNA fingerprinting. 44:266-274.
warm climate performance of clones. 47:124-126.

Principal component analysis. anthocyanins, flavonols, and color parameters of Spanish red wines. 46:295-298.
red port wines. 44:27-34.

Processing enzymes. effects on anthocyanins and phenolics. 48:39-48.

Procyanidins. charge properties. 47:25-30.
composition in white wines. 44:168-172.
grape seed supplementation during fermentation effects on concentration. 46:363-367.
localization in grape seeds. 45:259-262.

Proline. concentration in 12 Washington grape juices. 47:389-402.

Protease(s). activity during *sur lie* fermentation. 48:1-6.
yeast acid. 45:312-318.

Protein(s). assay. 45:319-326.
for white wine. contribution to foam constitution in sparkling wines. 44:297-301.
estimation by the Bradford method. 48:303-309.
extraction from seeds. 47:268-278.
fermenting must proteins. 48:100-114.
fraction. varietal differentiation. 44:255-260.
fractionation and characterization. 46:250-254.
from seeds into wine. 47:268-278.
in seeds. 47:268-278.
instability of Gewürztraminer wine. 45:319-326.
isoelectric point influence on stability. 45:319-326.
origin of wine proteins. 48:100-114.
soluble. 48:100-114.
in Portuguese wine. 46:235-242.
stability. 45:410-416.
synthesis. *in vivo* response to anaerobiosis. 45:267-272.

Proteolytic activity in *sur lie* wine. 48:1-6.

Protonmotive force generation during malolactic fermentation. 46:319-323.

Pruning. 44:409-430.
Cabernet Franc vines. 44:81-85.
mechanized. 44:173-179.
Okanagan Riesling vines. 44:173-179.
weight. nitrogen fertilization effects on. 44:378-386.

Pulsed field gel electrophoresis (PFGE). plasmid and chromosome characterization of *Leuconostoc oenos*. 46:43-48.

Putrescine. biosynthesis. 48:137-144.
in fruiting grape cuttings. 48:80-84, 85-92.

PVPP effects on muscadine wines. 46:155-158.

Pyruvic acid production. grape must lees and insoluble solids effects on. 44:86-92.

Quality, grape. harvest date effects on. 46:10-16.
wine. environmental and management practices affecting. 44:409-430.

Quercetin. in Pinot noir grapes and wine. 46:187-194.
processing enzyme effects on levels in Pinot noir and Cabernet Sauvignon wines. 48:39-48.

Quercus. See oak.

R

Raisins. harvest date. effects on composition and yield. 46:10-16.
relationship to quality. 46:493-498.
pruning level and cane adjustment effects on production and quality. 45:141-149.
Thompson Seedless clone comparisons. 45:150-154.

Randomly Amplified Polymorphic DNA. 47:145-151.

RAPD markers. genetic analysis of *A. tumefaciens* and *A. vitis*. 47:145-151.

Rectified concentrated musts. 44:292-296.

Red wine. See Wine.

Reliance grapes. anthocyanin profile. 46:339-345.

Reserve nitrogen, grapevine. See Nitrogen.

Residual sugars in wine. fermentation by *Brettanomyces/Dekkera* spp. in red wine. 46:463-468.

Restriction fragment length polymorphism. analysis (RFLP) of wine grape cultivars. 44:266-274.
plasmid and chromosome characterization of *Leuconostoc oenos*. 46:43-48.

Resveratrol. concentration in wine. 46:159-165, 346-352; 47:57-62, 93-99; 47:415-420; 48:214-219.
evaluation of assay methods. 48:169-176.
relationship with fungal disease pressure in the vineyard. 46:1-4; 47:93-99.
extraction from grape skin during fermentation. 47:287-290.
glucoside. 48:214-219.
oxidation by peroxidase isoenzyme. 48:33-38.
production by grape berries. 47:57-62, 93-99.

α-Rhamnosidase activity of yeast during fermentation. 45:291-296.

Rhaminogalactans. 47:108-110.

Rhamnogalacturonan. charge properties. 47:25-30.

Rhodotorula. characterization by DNA (RAPD-PCR). 46:204-208.

Riesling grapevines. canopy management. 47:63-76.
carbohydrate changes and cold hardiness. 47:31-36.
fruit zone leaf removal. effect on yield, composition, and fruit rot. 45:133-140.
effect on canopy structure, microclimate, bud survival, shoot density, and vine vigor. 45:123-132.

Riesling wine. glycoconjugates. 48:397-402.
nitrogen vineyard fertilization. influence on monoterpene, higher alcohol, and ester concentrations. 44:275-284.
influence on yeast growth in juice. 46:49-55.

Ripening. See Berry and Grape berry.

RNA. yield and quality from grape berries at different developmental stages. 46:315-318.

Root(s), grapevine. characteristics. phosphorus influence on. 47:403-409.
distribution. 45:345-348; 46:306-314.
defoliation effects on growth. 46:306-314.
mapping. 45:345-348.
morphology. rootstock and P availability effects on. 47:403-409.
partial defoliation effects on development and distribution. 46:306-314.
zone restriction. by water stress. 47:157-162.

Rootstock(s), grapevine. 44:409-430; 45:345-348.
110R. root distribution in gravelly clay loam. 45:345-348.
A×R#1. root distribution in gravelly clay loam. 45:345-348.
certified. 44:148-152.
clean. 44:148-152.
crown gall control. 44:22-26, 409-430.
effects on phosphorus uptake and partitioning. 47:403-409.
effects on photosynthesis of grafted and ungrafted vines. 45:297-304.
flooding stress, response to. 44:313-319.
identification by isozyme banding patterns. 46:299-305.
influence on gas exchange in Pinot noir. 45:173-180.
influence on shoot growth, leaf area, and petiole P in vines. 47:217-224.
influence on yield and fruit composition in Pinot noir. 45:181-187.
-latent virus interactions. 44:148-152.
phylloxera resistance. 44:285-291; 47:373-379.
St. George. root distribution in gravelly clay loam. 45:345-348.
Teleki 5C. 44:22-26.
VAM fungi influence on growth. 48:93-99.

Ruby Seedless vines. rootstock influence on. 46:559-563.

S

Saccharomyces. contribution to aroma components. 47:206-216.
differentiation by RAPD-PCR. 46:204-208.
dynamics of yeast population. 48:75-79, 339-344.

Saccharomyces bayanus. immobilized in double-layer gel beads or strands. 48:471-481.
sugar uptake effects on fermentation. 46:175-180.

Saccharomyces cerevisiae. amino acid utilization by. 46:75-83.
ammonium utilization by. 46:75-83.
autolysis. in low alcohol sparkling apple wine. 44:93-98.
2,3-butanediol isomers formed during fermentation by. 46:134-137.
colloid concentration influence on yeast macromolecule production. 46:486-492.
cryotolerant strains. higher alcohol production by. 47:343-345.
to improve wine composition. 46:143-147.
deacidification of wine. 44:371-377.
diacetyl. effects on during alcoholic fermentation. 46:442-448.
genetically engineered strain. 48:193-197.
glycoconjugates. effects on. 48:397-402.
hydrogen sulfide production during fermentation. 44:211-216; 46:269-273.
influence on diacetyl concentration. 46:385-388.
influence on volatile composition. of high acid musts. 44:371-377.
lactic acid bacteria antagonistic activity against. 47:1-10.
malate transport. 48:193-197.
n-propanol production. 44:17-21.
Pichia membranaefaciens presence on grape berry surface. 47:435-440.
population in new winery. 48:339-344.
sherry wine. 48:55-62, 160-168.
sparkling wine production. 44:217-226; 48:471-481.
sugar transport inhibition effects on production rate. 44:56-64; 46:175-180.
vellum formation. 48:55-62, 160-168.

Saccharomyces oviformis. secondary fermentation in low alcohol sparkling apple wine. 44:93-98.

St. George rootstock. See Rootstock.

Sampling for bunch rot in harvested grapes. 45:300-304.

Sangiovese grapevines. 45:71-78.
interactions of leaf age, fruiting, and exogenous cytokinins under non-irrigated conditions. 45:278-284.
shading effects on. 46:227-234.

Sapwood, oak. ellagitannin content. 46:262-268.
lactones. 46:419-423, 424-428.

Sauvignon blanc grapevines. gas exchange and leaf water potential. 45:423-428.

Schizosaccharomyces pombe. 44:113-117, 371-377.

Scion. influence on shoot growth, leaf area, and petiole P in vines. 47:217-224.

Seeding, potassium bitartrate. of sherry. 46:525-528.

Seedless grapes. palynological classification. 48:207-213.

Seedlessness. streptomycin-induced. 47:340-342.

Seeds, grape. amino acid extraction from. 47:268-278.
fatty acids composition. 44:180-186.
lead distribution. 45:220-228.
peptides. 47:268-278.
phenols into wine. 47:268-278.
weights of, from 25 grape varieties. 47:268-278.

Semillon wine. sensory effects of thermal processing on Chardonnay and Semillon. 45:243-251.

Sensory characteristics of grapes. profiling. 47:301-308.

Sensory characteristics of wine. See also specific characteristics.
aging effects on Vidal blanc wine. 46:56-62.
bitterness. 45:6-10.
Burgundy wines. 48:187-192.
canopy management influence on. 46:542-558; 47:77-92, 329-339.
catechin concentration effect on sourness and bitterness. 45:6-10.
Charm analysis. 46:392-398.
cluster exposure effects on Golden Muscat. 44:198-204.
color evaluation. of red port wines. 44:27-34.
processing effects on. 47:279-286.
of sherry wines. 46:138-142.
comparison using GC-olfactometry. 45:201-212.
crop level effects on. 47:329-339.

diacetyl concentration. 46:385-388.
ethanol effect on sourness and bitterness. 45:6-10.
ethyl anthranilate. 46:392-398.
ethyl cinnamate. 46:392-398.
ethyl 2,3-dihydrocinnamate. 46:392-398.
identification. 48:177-180.
interactions between yeast walls and aroma substances. 45:29-33.
malolactic fermentation. effects on Burgundy wines. 48:187-192.
influence on diacetyl concentration. 46:385-388.
methyl anthranilate. 46:392-398.
mouthfeel. 46:128-133.
oak effects on. 45:429-434.
odor-active compounds. 46:84-87, 392-398.
on-skin fermentation time effects on. 45:56-62.
pH effect on sourness and bitterness. 45:6-10.
Port wine. 47:37-41.
potassium silicate treatment of powdery mildew effects on. 47:421-428.
qualifications of tasting panels. 48:177-180.
Saccharomyces and non-*Saccharomyces* contribution to aroma components. 47:206-216.
skin contact time effects on. 47:309-312.
sourness. 45:6-10.
Spanish white wines. 46:5-9.
sur lie method effects on 45:312-318.
taste thresholds of phenolic extracts of oak. 45:429-434.
thermal processing effects on Chardonnay and Semillon wines. 45:243-251.
time-intensity studies on taste and mouthfeel. 46:128-133
vineyard location influence on. 46:542-558.

Sequential injection analysis. determination of L-lactate in wine. 48:428-432.

Sessile oak. ellagitannin content. 46:262-268.
ß-methyl-γ-octalactone stereoisomers. 46:424-428.

Seyval blanc grapevines. canopy configuration effects. 48:482-491.
flooding stress. 44:313-319.
photosynthesis and dry matter partitioning. 44:139-147.

Shading. See Canopy management, Grapevine, Microclimate.

Sherry. acidification of must. 44:400-404.
discoloration. 46:138-142.
potassium bitartrate seeding. 46:525-528.
rho mutants. 48:71-79.
velum formation by flor yeasts. 48:55-62; 71-79, 160-168.

Venus juice. effects of carbonation and ethyl maltol on quality. 44:320-326.

Shiraz wine. resveratrol glucosides. 47:415-420.

Shoot(s), grapevine. density. leaf removal effects on. 45:123-132.
elongation. 47:217-224.
growth. water logging effects on. 45:285-290.
phosphorus availability, scion, and rootstock influence on. 47:217-224.
number. effects on vine development and morphology. 47:244-250.
orientation. effects on growth, photosynthesis, and hydraulic conductivity. 46:324-328.
pinching. effects on ^{14}C-assimilate partitioning. 44:1-7.
positioning and thinning. 44:409-430; 47:380-388.

Site-specific natural isotope fractionation-nuclear magnetic resonance for must characterization. 45:79-85.

Skin. fatty acids composition. 44:180-186.
lead distribution. 45:220-228.
resveratrol extraction from. 47:287-290.

Sluggish fermentation. fructose uptake capacity of yeasts effects on. 46:175-180.
lactic acid bacteria antagonistic activity against yeast. 47:1-10.

Soil. gravelly clay loam. root distribution 45:345-348.
lime content. 48:93-99.
moisture. 44:409-430.

Source:sink relationships. 45:173-180; 46:306-314, 469-477, 478-485; 47:244-250, 251-256.

Sourness in wine. 45:6-10; 46:128-133.

Spanish wine. yeast population development. 44:405-408.

Sparkling wines. ascorbic acid effects on post-disgorgement oxidative stability. 44:227-231.
calcium tartrate precipitation. 46:509-513.
film stability. 44:387-392.
filtration. 44:387-392; 45:407-409.
foam active compounds in. 45:407-409; 46:518-524.
surface-active materials. 44:387-392.
yeast. hybridization and typing. 44:217-226.
immobilized in double-layer gel beads or strands. 48:471-481.

Spectrophotometric analysis. color analysis. red port wines. 44:27-34.
polysaccharide levels. 46:564-570.

Spectroscopy. anthocyanin polymer structures. 47:323-328.

Spermidine. in fruiting grape cuttings. 48:80-84, 85-92.

Stability, wine. nitrogenous composition of grape seeds contribution to. 47:268-278.
test for calcium tartrate. 44:65-75.

Stabilization, wine. 44:65-75.

Stave wood. See barrel(s).

Stereoisomers of ß-methyl-γ-octalactone. 46:419-423, 424-428.

Sterols. fermentation activity in grape musts. 44:452-458; 47:429-434.

Stiellähme. 46:579-580.

Stilbenes. 46:159-165; 48:169-176.

Stomatal conductance. 45:297-304; 46:227-234, 324-328, 375-379.

Storage, wine. ethyl carbamate formation during. 44:309-312; 45:17-24.
temperature. effects on aroma of Chardonnay. 48:310-316.

Streptomycin. effects on pollen germination and ovule and seed development. 47:152-156.
-induced seedlessness. 47:340-342.

Stuck fermentation. See Fermentation, Sluggish fermentation.

Succinic acid production during fermentation. 46:143-147.

Sucrose accumulation in grapes. 48:403-407.

Sucrose-metabolizing enzyme. 48:403-407.

Sugar(s). content in white winemaking products. 47:193-198.
partial defoliation effects on concentration. 46:306-314.
seasonal changes in and cold hardiness of vines. 47:31-36.
type and level influence on malate metabolism of *Schizosaccharomyces pombe* cells. 44:113-117.
uptake capacity of yeasts. 46:175-180.

Sulfite(s). reductase. 46:269-273.
residue persistance on table grapes.. 48:121-124.
sulfate reduction to. 45:107-112.

Sulfur compounds. *bis*(2-hydroxyethyl) disulfide influence on wine aroma. 46:84-87.
complex media effects on GC analysis in Cognac. 48:333-338.
detection in Cognac. 48:333-338.

Sulfur dioxide. production by yeast. 45:107-112; 45:464-469.
volatile compounds in California wines. 45:341-344.

Sultana grapevines. water logging. 45:285-290.

Sun exposure of grape clusters effects on quercetin concentration in grapes and wine. 46:187-194.

Sunflecks. 46:116-127, 209-218, 219-226.

Sur lie method for Koshu wines. 45:312-318; 48:1-6.

Sweetness, wine. 46:128-133.

Syndrome X. 46:449-462.

Synthetic wine. lactic acid bacteria growth and metabolism in. 46:166-174.

Syringaldehyde. influence of wood treatment, temperature, and maceration time. 47:441-446.

T

Table grapes. anthocyanin profile of Reliance by HPLC. 46:339-345.
descriptive profiling of cultivars. 47:301-308.

Flame Seedless. cluster thinning. 46:429-436.
Italia Red. induced seedlessness. 47:340-342.
methyl bromide fumigation. 44:8-12.
palynological classification of seedless grapes. 48:207-213.
Ruby Seedless. 46:559-563.
storage. 44:8-12.
streptomycin-induced seedlessness. 47:340-342.
sulfite residue persistance. 48:121-124.
sulfur dioxide fumigation. 48:121-124.
Thompson Seedless. harvest date relationship to fruit and raisin quality. 46:493-498.

Tank aging. See Aging.

Tannin(s). -anthocyanin interactions. 45:349-352.
charge properties. 47:25-30.
oak. 45:429-434; 46:98-115.

Tartaric acid. sherry must acidification. 44:400-404.

Tartrate. in rectified concentrated musts. 44:292-296.

Taste. physiology of human sensory response to wine. 48:271-279.
thresholds of phenolic extracts of oak. 45:429-434.

Temperature. See also Acclimation, Cold hardiness.
fermentation. alcoholic. 44:127-133.
wine storage. 44:309-312.

Terpene(s). free volatile. in Golden Muscat. 44:198-204.
potential volatile. in Golden Muscat. 44:198-204.

1,2,3,4-Tetrahydro-ß-carboline-3-carboxylic acids identification in wine samples. 45:92-101.

Thermal processing. effect on glycoconjugates in White Riesling. 48:397-402.
sensory effects on Chardonnay and Semillon wines. 45:243-251.

Thermotolerance. Cabernet Sauvignon. 44:153-158; 46:243-249; 48:459-464, 465-470.

Thermotherapy. 46:243-249; 48:131-136.

Third party inspection of harvested wine grapes for *Botrytis cinerea*. 44:261-265.

Thompson Seedless grapevines. cane adjustment effects on raisin production and quality. 45:141-149.
clones. for raisin production. 45:150-154.
harvest date effects on fruit composition, characteristics, and yield. 46:10-16.
relationship to fruit and raisin quality. 46:493-498.
internal browning. 44:8-12.
pruning effects on raisin production and quality. 45:141-149.
waterberry. 46:579-580.

Threonine metabolism relationship to *n*-propanol production. 44:17-21.

Total acidity determination in wines. 44:118-120.

trans-ß-methyl-γ-octalactone. aroma threshold. 46:292-294.

Transmissible agents. viroids. 47:21-24.

trans-Resveratrol. oxidation by peroxidase isoenzyme. 48:33-38.
processing enzymes effects on. 48:39-48.

Transpiration. influence of defoliation, rootstock, training system, and leaf position. 45:173-180.
methanol effects on. 47:297-300.

Training system, grapevine. See Canopy management.

Transduction mechanisms in human sensory response to wine. 48:271-279.

Trebbiano Romagnolo vines. virus effects on. 48:7-12.

Treixadura wines. 47:309-312.

Trellising. See also Canopy management, Grapevine.
Chancellor vines. 46:88-97.
for mechanized vineyards. 46:116-127.
Pinot noir vines. 47:329-339.
Riesling vines. 47:63-76.
shoot orientation. 46:324-328.

Trihydroxystilbene. See also resveratrol.
concentration in muscadine grapes and wines. 47:57-62.
concentration in Japanese grapes and wines. 47:93-99.

Tronçais oak. 45:429-434.
See also Oak.

Trunk volume effects on yield and fruit composition. 45:181-187.

Turbidity, wine. 46:319-338.

U

Urea. amino acid uptake by yeasts effects on. 44:35-40.
ethyl carbamate formation, involvement in. 44:309-312; 45:17-24.
reduction by acid urease. 45:17-24.

Urethane. See also ethyl carbamate.
formation from arginine degradation by wine lactic acid bacteria. 45:235-242.

V

VA mycorrhiza. interaction with soil lime content. 48:93-99.

Vacuum filtration. 47:313-322.

Vanillin. influence of wood treatment, temperature, and maceration time. 47:441-446.

Varietal differentiation. of must and wine by protein fraction. 44:255-260.
of Penedès varietal musts. 46:283-291.

Varietal identification. RAPD markers. 48:492-501.

Vegetative response. of mature vines to cropping stress. 44:435-440.
to shoot orientation. 46:324-328.

Velum formation by flor yeasts in sherry. 48:55-62; 71-79.

Venus juice. effects of carbonation and ethyl maltol on quality. 44:320-326.

Veraison. vine water stress and peduncle girdling effects on berry growth and deformability. 44:193-197.
xylem discontinuity. 44:187-192.

Vidal blanc wine aroma characteristics. 46:56-62.

Vine. capacity 47:244-250.
growth flush. 47:251-256.
mortality. 44:435-440.
spacing. 44:409-430.

Vineyard. frost protection. 44:232-235, 431-434.
labor requirements. canopy management effects on. 47:63-76.
location. effects on Gewürztraminer. 47:77-92.
mechanization. 44:173-179.
mowing. 44:431-434.
multiple crops by use of water stress. 47:157-162.
practices affecting grape composition and wine quality. 44:409-430.
yield estimation. 45:63-69.

Vinification treatments. influence on aroma constituents. 48:198-206.

influence on resveratrol concentration. 48:214-219.

Virus. See also specific virus.
effects on growth, yield, and fruit. 48:7-12.
graft-transmission. 48:7-12.
indexing. 47:239-243.
inoculation effect on carbohydrate and nitrogen accumulation. 44:81-85.
latent. -rootstock interactions. 44:148-152.
leafroll. and rugose wood. 48:438-442.
detection by ELISA and symptomatology. 47:239-243.
purification procedure. 48:521-524.
rootstocks/latent virus interactions. 44:148-152.
yields. 48:521-524.

Viscosity, wine. 46:128-133.

Viticultural zones. 48:285-291.

Vitis aestivalis. 44:435-440.

Vitis coignetiae. 48:323-327.

Vitis labrusca wines. *bis*(2-hydroxyethyl) disulfide influence on aroma. 46:84-87.

Vitis rotundifolia vines. pruning method effects on yield and berry composition. of Noble and Welder. 47:291-296.

Vitis rotundifolia wines. anthocyanin polymer structures. 47:323-328.
skin fermentation time effects on sensory characteristics. 45:56-

62.

Vitis vinifera vines. canopy light environment. 46:209-218, 219-226, 389-391.
carbohydrate levels and cold hardiness. 47:31-36.
clonal selection for warm climate. 47:124-126.
cluster thinning. 46:429-436.
crown gall resistance 48:145-149.
cuttings. propagation by. 46:195-203.
DNA extraction. 45:102-106.
dormant buds. heat shock proteins. 48:465-470.
elemental sulfur residues on berries. 44:205-210.
harvest date effects on fruit composition, characteristics, and yield. 46:10-16.
heat tolerance of dormant cuttings. 46:243-249.
inflorescence necrosis. 45:155-160.
inorganic nitrogen status. 45:377-387.
intercepted radiation. 46:389-391.
in vitro propagation. 46:195-203.
juvenile characteristics. 46:195-203.
leaf. area. phosphorus, scion, and rootstock influence on. 47:217-224.
cell wall elasticity. 48:352-356.
chlorophyll and nitrogen content. 45:278-284.
heat shock protein expression. 48:459-464.
ontology. 48:352-356.
phenolic composition. 47:186-192.
symplastic water. 48:352-356.
methanol. field response to. 47:297-300.
nitrogen. fertilization. 44:378-386.
leaf content. 45:278-284.
pool in bleeding sap. 45:327-332.
source and shading effects on Pinot noir vines. 47:173-180.
palynological classification. 48:207-213.
peduncle girdling effects on berry growth and deformability. 44:193-197.
petiole analysis. 45:377-387.
phosphorus. 47:217-224.
phosphorus availability influence on. 47:217-224.
photosynthetic photon flux density in the canopy, (PPFD). 46:209-218, 219-226.
pollen tube growth inhibitors. 46:17-21.
propagation. 46:195-203.
protein synthesis. response too anaerobiosis. 45:267-272.
rootstock. influence on shoot growth, leaf area, and petiole P. 47:217-224.
scion. influence on shoot growth, leaf area, and petiole P. 47:217-224.
streptomycin-induced seedlessness. 47:340-342.
sunflecks. 46:209-218, 219-226.
thermotherapy. 46:243-249.
thermotolerance. 48:459-464, 465-470.
warm climate performance of clones. 47:124-126.
water. loss. 46:243-249.
stress effects on berry growth and deformability. 44:193-197.
wines. furaneol for determination for differentiation of white wines. 46:181-186.
xylem exudate. discontinuity. 44:187-192, 193-197.
nitrogen pool. 45:327-332.

Vitis vinifera wines. anthocyanin polymer structures. 47:323-328.

Volatile(s). components of cork wine stoppers. 45:401-406.
composition of Chardonnay juice. 44:359-370.
extraction from oak. 47:163-172.
phenols. 44:359-370; . 48:443-448.
production during vinification. 46:278-280.
sparkling wine foam characteristics. 46:518-524.
sulfur compounds in California wines. 45:341-344.
in Cognac. 48:333-338.
yeast influence on. 44:371-377; 45:29-33; 46:278-280; 47:1-10.

Vosges oak. 45:429-434.
See also Oak.

W

Water. logging. water logging. 45:285-290.
relations and gas exchange. 45:333-337.
stress. effects on berry growth and deformability. 44:193-197.
to induce budbreak. 48:115-120.
to produce two crops a year. 47:157-162.
use efficiency. influence of defoliation, rootstock, training system and leaf position. 45:173-180.

Waterberry. 46:579-580.

Whiskey aging. 46:98-115.

White must. differentiation of Penedès varietal musts. 46:283-291.

White Riesling grapevines. nitrogen fertilization. 44:378-386; 45:34-42.

White Riesling wine. gas chromatography-olfactometry comparison with French-American hybrid wines. 45:201-212.
glycoconjugates. 48:397-402.
nitrogen fertilization influence on composition. 45:34-42.

White wine. See Wine.

Wine(s). See also specific wine.
aging. See Aging.
alcohol content determination. 48:220-224.
amino acid. determination in wines. 47:127-133; 48:229-235.
ethyl esters formation. 44:41-48.
N-carbamyl identification. 44:49-55.
Port wine. 47:37-41.
anthocyanins. changes during fermentation and post-fermentation standing of musts. 45:161-166.
oxidative changes. 48:225-228.
polymer structure. anthocyanin polymer structures. 47:323-328.
skin fermentation time effects on. 45:56-62; 47:323-328.
-tannin interactions. 45:349-352.
appellation of origin. 44:302-308.
apple. low alcohol sparkling. 44:93-98.
aroma. See also Sensory.
aromatic composition. 47:134-144; 48:198-206.
basal leaf removal effects on. 46:542-558.
bis(2-hydroxyethyl) disulfide. precursor of off-odor. 46:84-87.
Burgundy Pinot noir wines. 46:392-398.
carbonic maceration. effects on. 47:134-144.
comparison using GC-olfactometry. 45:201-212; 46:56-62.
descriptive analysis. 46:5-9.
ethyl anthranilate. 46:392-398.
ethyl cinnamate. 46:392-398.
ethyl 2,3-dihydrocinnamate. 46:392-398.
GC-sniffing analysis. 46:292-294.
interactions between yeast walls and aroma substances. 45:29-33.
2-mercaptoethanol. 46:84-87.
methyl anthranilate. 46:392-398.
oak wood age effects on. 47:134-144.
physiology of human sensory response to wine. 48:271-279.
skin contact time effects on. 45:56-62; 47:309-312.
threshold. 46:292-294.
Vidal blanc wine. 46:56-62.
vineyard location effects on. 46:542-558.
volatile phenols. 48:443-448.
astringency. time-intensity studies. 46:128-133.
bacterial starter cultures. 45:464-469.
barrique. See Barrel aged.
base wine filtration impact on Champagne foam. 45:407-409.
biogenic amines. 45:460-463.
biplot analysis for classification. 44:302-308.
bitterness. time-intensity studies. 46:128-133.
Cabernet Sauvignon. See Cabernet Sauvignon wine.
cadmium determination in. 45:305-311.
calcium tartrate crystallization kinetics. 44:65-75.
precipitation in model wine. 46:509-513.
canopy manipulation effects on. Gewürztraminer. 47:77-92.
Pinot noir. 47:329-339.
carbohydrate analysis by capillary gas liquid chromatography. 45:229-234.
carbonic maceration. 47:134-144.

carboxylic acids relations ship to skin contact time. 47:309-312.
catechin concentration effect on sourness and bitterness. 45:6-10.
catecholase activity. fining treatment effects on. 45:417-422.
cava. 46:518-524.
Certified Brand of Origin. 47:410-414.
Chambourcin. See Chambourcin wine.
Champagne. aging. foam. 44:387-92; 45:407-409.
must oxidation during pressing. 44:393-399.
Chardonnay. See Chardonnay.
clarification by vacuum filtration. 47:313-322.
classification. neural networks. 47:410-414.
cluster exposure effects on olfactory evaluation of Golden Muscat. 44:198-204.
colloid concentration influence on yeast macromolecule production. 46:486-492.
color. See also Color.
discoloration of sherry. 46:138-142.
environmental factors affecting. 45:43-48.
fermentation temperature effects on. 48:198-206.
flavonoids correlations. 46:295-298.
fining treatment effects on. 45:417-422; 46:155-158.
measurement. 48:357-363, 364-369.
Port wine. 47:37-41.
processing effects on. 47:279-286.
red wine colorimetric parameters. 46:353-356.
skin fermentation time effects on. 45:56-62.
vine defoliation effects on. 46:306-314.
comparison of composition of oak and tank aging. 45:11-16.
comparison French-American hybrid wines with White Riesling using gas chromatography-olfactometry. 45:201-212.
composition. improvement with cryotolerant *S. cerevisiae*. 46:143-147.
nitrogenous composition of grape seeds contribution to. 47:268-278.
skin contact time effects on. 47:309-312.
condensation products in red wine. 48:370-373.
corks. oxalates determination in. 46:63-66.
volatile components. 45:401-406.
descriptive analysis. 46:5-9.
dessert. alcohol content determination. 48:220-224.
differentiation techniques. 48:285-291.
dimethylsulfide and dimethylsulfoxide in wine. 44:327-332.
ethanol. analysis. 48:280-284.
effect on sourness and bitterness. 45:6-10.
ethyl carbamate formation in. 44:309-312.
fermentation. See Fermentation, Alcoholic fermentation, and Malolactic fermentation.
fining treatment effects on. 45:417-422; 46:155-158, 329-338; 48:303-309.
flavonoids. correlation with color in red wines. 46:295-298.
flavor. See also Flavor and Sensory.
descriptive analysis. 46:5-9.
nitrogenous composition of grape seeds contribution to. 47:268-278.
oak effects on. 47:163-172.
physiology of human sensory response to wine. 48:271-279.
skin fermentation time effects on. 45:56-62; 47:441-446.
time-intensity studies. 46:128-133.
filtration. effect on sparkling wine foam. 44:297-301; 45:407-409.
fortified. 47:37-41.
free amino acid utilization during fermentation and bottle-aging. 47:313-322.
furan extraction. 47:163-172.
geographical classification. 44:302-308.
glycoconjugates. 48:397-402.
glycoprotein characterization. 45:410-416.
glycosidase activity of yeast strains. 45:291-296.
haze. 46:319-338.
heat-stable proteins. 45:410-416.
Hungarian red. 46:67-74.
hydrogen sulfide production during fermentation. 44:211-216.
hydroxycinnamic acids. 48:225-228.
hyperoxidation. 48:150-156.
interactions between *L. oenos* and *Pediococcus* spp. during vinification. 45:49-55.
instability. 46:509-513.
L-lactate. sequential injection. determination. 48:428-432.
lactic acid. determination. 47:11-16.
lactic acid bacteria. 47:1-10.
lead content. 44:459-463, 464-467; 45:305-311.
low alcohol. 44:93-98.
maceration time effects on. 47:441-446.
malic acid determination. 47:11-16.
malolactic fermentation. See Fermentation.
model. See Model wines.
muscadine. fining effects on. 46:155-158.
resveratrol concentration. 47:57-62.
N-carbamyl amino acids identification. 44:49-55.
nitrogen. content. changes in made by *sur lie* method. 45:312-318.
depletion. effect on hydrogen sulfide production. 46:269-273.
determination. 47:127-133.
nitrogenous composition of grape seeds contribution to composition. 47:268-278.
Noble. See Noble wine.
oak. aging. See Aging.
ellagitannins role in oxidation of red wine. 47:103-107.
extraction of volatile compounds. 47:163-172.
wood age effects on aroma composition. 47:134-144.
oak-related compounds. 47:163-172, 441-446.
odor-active compounds. 46:392-398.
bis(2-hydroxyethyl) disulfide. 46:84-87.
odor analysis. using gas chromatography-olfactometry 45:201-212; 46:392-398.
organic and inorganic acids. simultaneous separation. 48:408-412.
origin. differentiation techniques. 48:285-291.
neural network classification. 47:410-414.
oxidation. 46:274-277, 380-384; 47:103-107; 48:225-228.
peptides. 45:167-172; 46:319-338.
pH effect on sourness and bitterness. 45:6-10.
phenolic(s). See also Phenolics.
fining treatment effects on. 45:417-422; 46:155-158, 329-338.
influence of wood treatment, temperature, and maceration time. 47:441-446.
microbial synthesis. 48:443-448.
oxidative changes in during winemaking. 48:225-228.
Pinot noir. canopy management effects on composition and sensory characteristics. 47:329-339; 48:198-206.
oak aging effects on. 46:67-74; 47:163-172.
processing effects on. 47:279-286.
separation by HPLC. 45:1-5.
skin fermentation time effects on. 45:56-62.
temperature effects on. 48:198-206.
polymeric pigments. changes during fermentation and post-fermentation standing of musts. 45:161-166.
polysaccharides. 46:564-570; 47:25-30, 108-110.
Port. color evaluation. 44:27-34.
vinification methods. 47:37-41.
Portuguese. soluble protein. 46:235-242.
post-fermentation standing. changes in free anthocyanins and polymeric pigments. 45:161-166.
precipitation of calcium tartrate. 46:509-513.
procyanidin composition. 44:168-172.
protein. fraction. for varietal differentiation. 44:255-260.
fractionation and characterization. 46:250-254.
heat stability in red wine. 45:410-416.
in Portuguese wine. 46:235-242.
origin of. 48:100-114.
quantification using Bradford method. 48:303-309.
quality. environmental and management practices affecting. 44:409-430.
vine defoliation effects on. 46:306-314.
recognition techniques. 48:285-291.
red. acetaldehyde-flavanol condensation products.
color measurement. 48:357-363.
colorimetric parameters. 46:353-356.

glycoproteins. 48:100-114.
flavonoid and non-flavonoid compounds during and after fermentation. 46:255-261.
oak aging effects on phenolics. 46:67-74; 47:103-107.
oxidation. 47:103-107.
sugar composition. 48:100-114.
residues. 46:319-338.
resveratrol. analysis by GC-MS. 46:346-352; 48:169-176.
concentration in wine. 47:57-62, 93-99; 48:214-219.
concentration. relationship with fungal disease pressure in the vineyard. 46:1-4; 47:93-99.
extraction from grape skins during fermentation. 47:287-290.
rosé. color measurement. 48:357-363.
sensory. analysis. See also Descriptive sensory analysis, Sensory, Flavor, and Aroma.
bis(2-hydroxyethyl) disulfide. precursor to off-odor. 46:84-87.
bitterness. 45:6-10.
canopy management effects on. 46:542-558; 47:77-92, 329-339.
catechin concentration effect on sourness and bitterness. 45:6-10.
color. correlation with flavonoids. 46:295-298.
evaluation of red port wines. 44:27-34.
descriptive analysis. 46:5-9, 529-541.
descriptors. 48:198-206.
diacetyl. 46:385-388, 442-448.
differential response. 48:271-279.
ethanol effect on sourness and bitterness. 45:6-10.
fermentation temperature effects. 48:198-206.
fining treatment effects on. 45:417-422; 46:155-158.
hydrolyzed flavor precursors contribution to quality of Shiraz oak phenols influence on. 45:429-434.
identification. 48:177-180.
pH effect on sourness and bitterness. 45:6-10.
physiology of human sensory response to wine. 48:271-279.
skin contact time effects on. 47:309-312.
thermal processing effects on Chardonnay and Semillon. 45:243-251.
vineyard location influence on. 46:542-558.
sequential injection. determination of L-lactate in wine. 48:428-432.
sherry. discoloring process. 46:138-142.
seeding. 46:525-528.
velum formation by flor yeasts. 48:55-62; 71-79, 160-168.
sluggish fermentation. 46:278-280; 47:1-10.
sourness. 45:6-10.
time-intensity studies. 46:128-133.
Spanish. 44:405-408; 46:283-291, 295-298.
sparkling. See also Sparkling wine.
ascorbic acid effects on post-disgorgement oxidative stability. 44:227-231.
bottle-fermented. yeast immobilized in double-layer gel beads or strands. 48:471-481.
calcium tartrate precipitation. 46:509-513.
filtration effects on foam behavior. 44:387-392; 45:407-409.
film stability. 44:387-392.
foam active compounds in. 44:297-301, 387-392; 45:407-409; 46:518-524.
low alcohol. 44:93-98.
surface-active materials. 44:387-392.
yeast. hybridization and typing. 44:217-226.
population development. 44:405-408.
spirit mixtures. 47:441-446.
stability. nitrogenous composition of grape seeds contribution to. 47:268-278.
starter cultures. 45:464-469.
stoppers. volatile components. 45:401-406.
storage. ethyl carbamate formation during. 45:17-24.
sulfur compounds in wine. 46:84-87.
sulfur dioxide. to reduce browning. 45:417-422.
sur lie method. effect on nitrogen compounds. 45:312-318.
free amino acid behavior and proteolytic activities during fermentation. 48:1-6.
storage. effect on glycoconjugates. 48:397-402.
sweetness. time-intensity studies. 46:128-133.
synthetic. lactic acid bacteria in. 46:166-174.
tannin. -anthocyanin interactions. 45:349-352.
charge properties. 47:25-30.
oak. effects on flavor. 45:429-434.
tasting panels. 48:177-180.
terpenol content. 45:291-296.
thermal processing. effects on glycoconjugates in White Riesling. 48:397-402.
sensory effects on Chardonnay and Semillon. 45:243-251.
time-intensity studies to evaluate taste and mouthfeel. 46:128-133.
total acidity determination in. 44:118-120.
urea. involvement in ethyl carbamate formation. 44:309-312.
vacuum filtration. 47:313-322.
varietal differentiation. 44:255-260; 46:5-9, 529-541.
vintage differentiation. 46:5-9, 529-541.
viscosity. time-intensity studies. 46:128-133.
volatile sulfur compounds. 45:341-344.
white. color measurement. 48:364-369.
furaneol for determination for differentiation of. 46:181-186.
identification. 48:177-180.
polysaccharide levels. 46:564-570.
yeast. See yeast.
zinc content. 45:305-311.

X Y Z

Xarel.lo wines. 46:5-9, 529-541, 564-570.
Xiphinema index. establishing in dual culture with grape. 45:273-277.
Xylem exudate. total nitrogen. 45:327-332.
Yeast(s). See also specific yeast.
absorption of urea. 44:35-40.
acetic acid production. 44:86-92.
amino acid. ethyl esters formation. 44:41-48.
uptake by. 44:35-40.
anthocyanin adsorption by yeast lees. 48:433-437.
antagonism by lactic acid bacteria. 47:1-10.
anthocyanidin adsorption by lees. 48:433-437.
autolysis. in low alcohol sparkling apple wine. 44:93-98.
in sparkling wine. 48:471-481.
Brettanomyces/Dekkera spp. effect on ethylphenol content of red wine. 46:463-468; . 48:443-448.
2,3-butanediol isomers formed during fermentation by. 46:134-137.
cellular proliferation. 46:357-362.
characterization methods. 46:175-180.
chromosomes. 46:175-180.
colloid concentration influence on yeast macromolecule production. 46:486-492.
contribution of strains. *Saccharomyces* and non-*Saccharomyces* contribution to aroma components. 47:206-216.
deacidification. 44:371-377.
DNA fingerprinting. 45:86-91; 46:204-208.
effect on urea formation. 44:35-40.
enological practices effects on population. 44:405-408.
ethanol tolerance. 44:217-226.
ethyl esters of amino acids formation. 44:41-48.
excretion of urea. 44:35-40.
flor. velum formation in sherry. 48:55-62, 160-168.
fluoride sensitivity. 47:225-226.
freeze-dried cells. 46:357-362; 47:42-48.
glucosidase activities during fermentation. 45:291-296.
growth. during vinification. vineyard N fertilization effects on. 46:49-55.
inhibition. 48:413-422.
Hanseniaspora uvarum. 48:339-344.
hydrogen sulfide production. 46:269-273.
hybridization. 44:217-226.
identification of strains. 46:204-208.
DNA fingerprinting. 45:86-91; 46:204-208.

polymerase chain reaction. 45:86-91; 46:204-208.
immobilized. 44:371-377.
double-layer gel beads or strands. 48:471-481.
fibers. 44:371-377.
inhibition by volatile acids. 46:278-280.
inhibition by alcohols and organic acids. 48:413-422.
interactions between *L. oenos* and *Pediococcus* spp. during red wine vinification. 45:49-55.
lactic acid bacteria antagonism. 47:1-10.
Lactobacillus. antagonism by lactic acid bacteria. 47:1-10.
2,3-butanediol isomers formed during fermentation by. 46:134-137.
Lactobacillus brevis. 44:76-80.
Lactobacillus plantarum. 44:76-80.
modelling of malolactic activity. 46:368-374.
Lactococcus lactis. 48:193-197.
Leuconostoc oenos. 44:76-80, 99-112; 45:49-55; 46:43-48, 134-137, 357-362, 385-388, 486-492; 48:423-427.
diacetyl. influence on. 46:385-388, 442-448.
freeze-dried culture inoculation. 47:42-48.
malolactic activity. 46:368-374; 48:423-427.
See also *Leuconostoc oenos*.
macromolecule production. colloid concentration influence on. 46:486-492.
molecular strain identification. 48:339-344.
natural fermentation. 47:435-440.
n-carbamyl amino acids identification in cells. 44:49-55.
n propanol production. 44:17-21; 45:107-112.
Pediococcus. 44:76-80; 45:49-55.
population. dynamics. 48:75-79.
during alcoholic fermentation in a new winery. 48:339-344.
viticultural and enological practices effects on. 44:405-408.
presence on berry surface. 47:435-440.
reactivation process. 46:357-362.
rho- mutants. 48:71-79.
Saccharomyces bayanus. 44:217-226; 47:340-345.
See also *Saccharomyces bayanus*.
Saccharomyces cerevisiae. 44:17-21, 56-64, 93-98, 217-226, 371-377; 46:75-83, 134-137, 143-147, 269-273, 385-388, 442-448, 486-492; 47:1-10, 435-440; 48:339-344, 397-402.
See also *Saccharomyces cerevisiae*.
See also *Saccharomyces fermentati*.
Saccharomyces oviformis. 44:93-98.
Schizosaccharomyces pombe. 44:113-117, 371-377; 48:193-197.
sensitivity to fluoride. 47:225-226.
simultaneous separation of organic and inorganic acids. 48:408-412.
starter cultures. 45:464-469; 46:357-362.
for sparkling wine production. 44:217-226.
sterol content of musts in the presence of growing cells. 44:452-458; 47:429-434.
strain(s). effect on hydrogen sulfide production during fermentation. 44:211-216; 45:107-112.
effects on glycoconjugates. 48:397-402.
identification. 45:86-91; 46:204-208; 48:339-344.
influence on *n*-propanol production. 44:17-21; 45:107-112.
plasmid and chromosome characterization. 46:43-48.
taxonomy. 46:175-180, 204-208.
sugar transport inhibition effect on production rate. 44:56-64.
sugar uptake capacity effects on alcoholic fermentation activity. 46:175-180.
Torulaspora delbrueckii. See *Torulaspora delbrueckii*.
typing. 44:217-226.
velum formation in sherry wine. 48:55-62, 71-79. 160-168.
viable cells in wine. composition of white wines from high acid must. 44:371-377.
viticultural practices effects on population. 44:405-408.
volatile aroma compounds. skin contact time. 47:309-312.
walls. interactions with volatile compounds in model wines. 45:29-33.
winery. 47:435-440.

Yield, grapevine. canopy manipulation. See Canopy management, Pruning.
components. field response of *V. vinifera* to methanol. 47:297-300.
path analysis of Okanagan Riesling vines. 44:173-179.
crop load influence on. 46:478-485.
estimation. 45:63-69.
leaf removal effects on. 45:173-180, 181-187, 188-191.
leafhopper feeding impact on. 48:291-302.
muscadine vines. 47:291-296.
nitrogen fertilization effects on. 44:378-386.
pruning method effects on Noble and Welder. 47:291-296.
rootstock effects on. 45:181-187.
Rupestris virus effects on. 48:449-458.
White Riesling vines. 44:378-386.

Zinc in wine. potentiometric stripping determination. 45:305-311.

Zinfandel grapevines. DNA fingerprinting. 44:266-274.
warm climate performance of clones. 47:124-126.